

## Scientific and Technical Information Center

**If more than one search is submitted, please prioritize searches in order of need.**

Title of Invention:

Earliest Priority Filing Date: 11/16/2013

Please search for a radiation sensitive material comprising a photoacoustic generator ~~containing~~ the structure of 1-a + 1-b as shown in claim (attached).  
Also search for a resin comprising both formula 2+3. Thank you.

### Type of Search

**Vendors and cost where applicable**

PTO-1590 (8-01)

=> file reg  
FILE 'REGISTRY' ENTERED AT 11:15:11 ON 12 MAR 2003  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2003 American Chemical Society (ACS)

=> d his

FILE 'LREGISTRY' ENTERED AT 09:43:03 ON 12 MAR 2003  
E TRIPHENYLMETHANE/CN  
L1 1 S E3  
L2 STR 519-73-3  
L3 STR

FILE 'REGISTRY' ENTERED AT 09:47:15 ON 12 MAR 2003  
L4 50 S L2  
L5 2096 S L2 FUL  
SAV L5 WAL916/A  
L6 33 S L2 AND L3 SSS SAM SUB=L5

FILE 'LREGISTRY' ENTERED AT 09:53:36 ON 12 MAR 2003  
L7 STR

FILE 'REGISTRY' ENTERED AT 09:56:58 ON 12 MAR 2003  
L8 18 S L2 AND L7 SSS SAM SUB=L5

FILE 'LREGISTRY' ENTERED AT 10:01:30 ON 12 MAR 2003  
L9 STR L2  
L10 STR L7

FILE 'REGISTRY' ENTERED AT 10:28:47 ON 12 MAR 2003  
L11 0 S L9 AND L10 SSS SAM SUB=L5  
L12 10 S L9 AND L10 SSS FUL SUB=L5  
SAV L12 WAL916A/A  
L13 6 S L9 AND L3 SSS SAM SUB=L5  
L14 67 S L9 AND L3 SSS FUL SUB=L5  
SAV L14 WAL916B/A

FILE 'CAOLD' ENTERED AT 10:36:17 ON 12 MAR 2003  
L15 0 S L12  
L16 0 S L14

FILE 'ZCAPLUS' ENTERED AT 10:36:33 ON 12 MAR 2003  
L17 15 S L12  
L18 93 S L14

FILE 'LREGISTRY' ENTERED AT 10:37:58 ON 12 MAR 2003  
L19 STR  
L20 STR

FILE 'REGISTRY' ENTERED AT 10:47:10 ON 12 MAR 2003

L21 SCR 2043  
L22 5 S L19 AND L20 AND L21  
L23 296 S L19 AND L20 AND L21 FUL  
SAV L23 WAL916C/A

FILE 'ZCAPLUS' ENTERED AT 10:50:15 ON 12 MAR 2003  
L24 128 S L23  
L25 3 S L24 AND L18

FILE 'HCAPLUS' ENTERED AT 10:51:49 ON 12 MAR 2003  
L26 128 S L23  
L27 74371 S RESIST OR RESISTS OR PHOTORESIST?

FILE 'LCA' ENTERED AT 10:53:50 ON 12 MAR 2003  
L28 32136 S (PRODUC? OR PROD# OR GENERAT? OR MANUF? OR MFR# OR CREA  
L29 13 S PAG OR PAGES OR P(W)A(W)G OR PHOTOACID? OR PHOTOGENERA?  
L30 1662 S L28(2A)ACID#

FILE 'HCAPLUS' ENTERED AT 10:57:57 ON 12 MAR 2003  
L31 12498 S L29 OR PAG  
L32 656217 S L30  
L33 126 S L26 AND L27  
L34 63 S L33 AND L31  
L35 74 S L33 AND L32  
L36 3403 S L5  
L37 80 S (L34 OR L35) AND L36

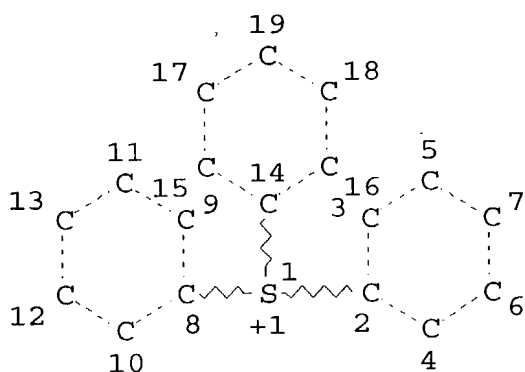
FILE 'REGISTRY' ENTERED AT 11:00:36 ON 12 MAR 2003  
L38 60 S L23 AND 2/NC

FILE 'HCAPLUS' ENTERED AT 11:01:58 ON 12 MAR 2003  
L39 89 S L38  
L40 47 S L39 AND L31  
L41 53 S L39 AND L32  
L42 79 S (L40 OR L41) AND L27  
L43 56 S L42 AND L36  
L44 54 S L43 AND P/DT  
L45 21 S L44 AND 1907-1999/PY

FILE 'ZCAPLUS' ENTERED AT 11:06:07 ON 12 MAR 2003  
L46 15 S L17 NOT L25

FILE 'REGISTRY' ENTERED AT 11:15:11 ON 12 MAR 2003

=> d l12 que stat  
L2 STR



## NODE ATTRIBUTES:

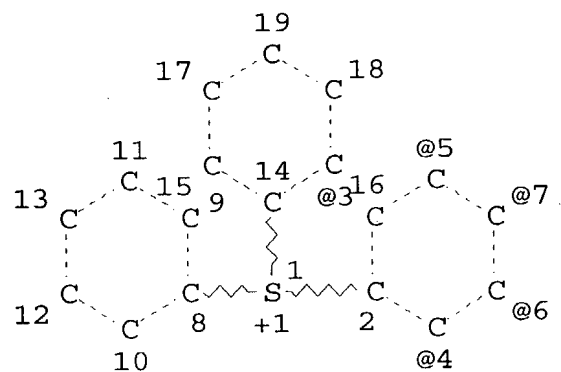
CHARGE IS E+1 AT 1  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 19

## STEREO ATTRIBUTES: NONE

L5 2096 SEA FILE=REGISTRY SSS FUL L2  
 L9 STR



G1 @25

Ak @28

O~Ak  
 @31 32

G1 @22

Page 1-A



Page 1-B

VAR G1=OH/28/31/36/39/43  
 VPA 25-3/5/7/6/4 U

VPA 22-3/5/7/6/4 U

## NODE ATTRIBUTES:

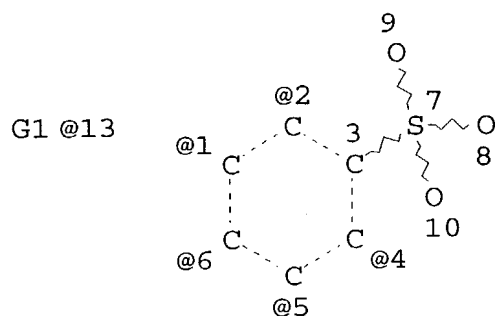
CHARGE IS E+1 AT 1  
 CONNECT IS E1 RC AT 28  
 CONNECT IS E1 RC AT 32  
 CONNECT IS E1 RC AT 36  
 CONNECT IS E1 RC AT 40  
 DEFAULT MLEVEL IS ATOM  
 GGCAT IS SAT AT 28  
 GGCAT IS SAT AT 32  
 GGCAT IS SAT AT 36  
 GGCAT IS SAT AT 40  
 DEFAULT ECLEVEL IS LIMITED  
 ECOUNT IS M1-X10 C AT 28  
 ECOUNT IS M1-X10 C AT 32  
 ECOUNT IS M3-X10 C AT 36  
 ECOUNT IS M3-X10 C AT 40

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 33

## STEREO ATTRIBUTES: NONE

L10 STR



VAR G1=F/CF3

VPA 13-4/5/6/1/2 U

## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 11

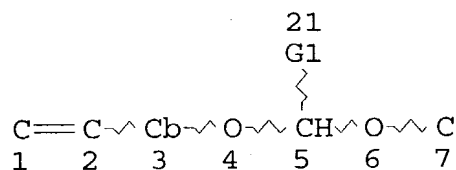
## STEREO ATTRIBUTES: NONE

L12 10 SEA FILE=REGISTRY SUB=L5 SSS FUL L9 AND L10

100.0% PROCESSED 69 ITERATIONS  
 SEARCH TIME: 00.00.01

10 ANSWERS

=> d 123 que stat  
L19 STR



VAR G1=ME/ET/N-PR/I-PR/N-BU/I-BU/S-BU/T-BU

NODE ATTRIBUTES:

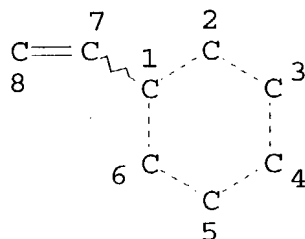
NSPEC IS RC AT 7  
DEFAULT MLEVEL IS ATOM  
GGCAT IS MCY UNS AT 3  
DEFAULT ECLEVEL IS LIMITED  
ECOUNT IS E6 C AT 3

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L20 STR



OH 11

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L21 SCR 2043

L23 296 SEA FILE=REGISTRY SSS FUL L19 AND L20 AND L21

100.0% PROCESSED 86277 ITERATIONS  
SEARCH TIME: 00.00.03

296 ANSWERS

=> file zcaplus

FILE 'ZCAPLUS' ENTERED AT 11:15:43 ON 12 MAR 2003

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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=> d l25 1-3 ibib abs hitstr hitind

L25 ANSWER 1 OF 3 ZCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:58486 ZCAPLUS

DOCUMENT NUMBER: 134:108015

TITLE: Heat-crosslinking photoacid generators and positive photoresists containing them

INVENTOR(S): Park, Jae Keun; Roh, Chang Ho; Moon, Bong Suk; Lee, Sang Kyun; Moon, Sung Yoon

PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., S. Korea

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

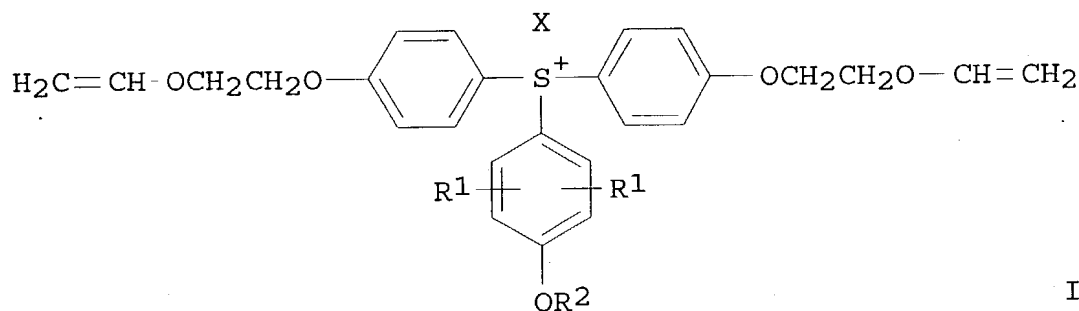
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001019799	A2	20010123	JP 2000-163642	20000531
US 6395450	B1	20020528	US 2000-583547	20000601
PRIORITY APPLN. INFO.:			KR 1999-19806	A 19990531
OTHER SOURCE(S):		MARPAT 134:108015		

GI



AB Heat-crosslinking photoacid generators I [X = (trifluoro)methanesulfonate, 4-toluenesulfonate, 10-camphor sulfonate, cyclohexane sulfamate, perfluorobutane sulfonate,

perfluorooctane sulfonate, F, Cl, Br, SbF<sub>6</sub>, BF<sub>4</sub>, PF<sub>6</sub>, AsF<sub>6</sub>; R<sub>1</sub> = H, Me; R<sub>2</sub> = alkyl, 2-vinyloxyethyl] are claimed. Also claimed is photoresist compns. comprising photoacid generators I, binder polymers II [R<sub>11</sub>, R<sub>21</sub> = functional groups unstable against acid, H, OMe, OEt, OBu, tert-butoxy; R<sub>11</sub> .noteq. R<sub>21</sub>; R<sub>3</sub> = C<sub>1</sub>-10 alkyl; R<sub>4</sub> = H, Me;  $p = q = r$  .noteq. 0;  $0 < o/(o + p + q + r) < 1$ ;  $0$  .ltoreq.  $p/(o + p + q + r)$  .ltoreq. 0.7;  $0$  .ltoreq.  $q/(o + p + q + r)$  .ltoreq. 0.7;  $0$  .ltoreq.  $r/(o + p + q + r)$  .ltoreq. 0.3], and solvents. The photoresists may also contain photoacid generators that are not thermal crosslinking agents and/or thermal crosslinking agents that are not photoacid generators. The photoresists can be pretreated at low pre-baking temp. and have high sensitivity and high resolu.

IT 158593-28-3, 4-[(1-Ethoxy)ethoxy]styrene-4-hydroxystyrene copolymer

(photoresist component; pos. photoresists contg. vinyloxyethoxyphenylsulfonium compds. as thermal crosslinking photoacid generators)

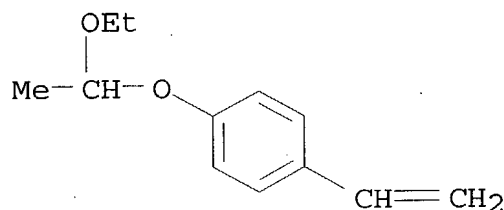
RN 158593-28-3 ZCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

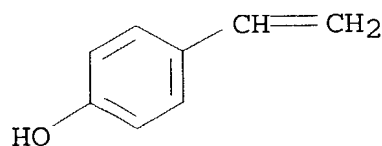
CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IT 320373-82-8P



(pos. photoresists contg. vinyloxyethoxyphenylsulfonium compds.  
as thermal crosslinking photoacid generators)

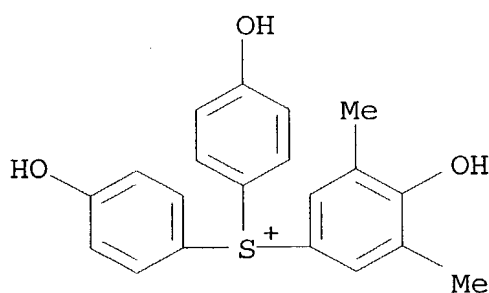
RN 320373-82-8 ZCAPLUS

CN Sulfonium, (4-hydroxy-3,5-dimethylphenyl)bis(4-hydroxyphenyl)-,  
methanesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 320373-81-7

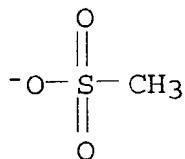
CMF C20 H19 O3 S



CM 2

CRN 16053-58-0

CMF C H3 O3 S



IT 320373-60-2P

(thermal crosslinking photoacid generator; pos. photoresists  
contg. vinyloxyethoxyphenylsulfonium compds. as thermal  
crosslinking photoacid generators)

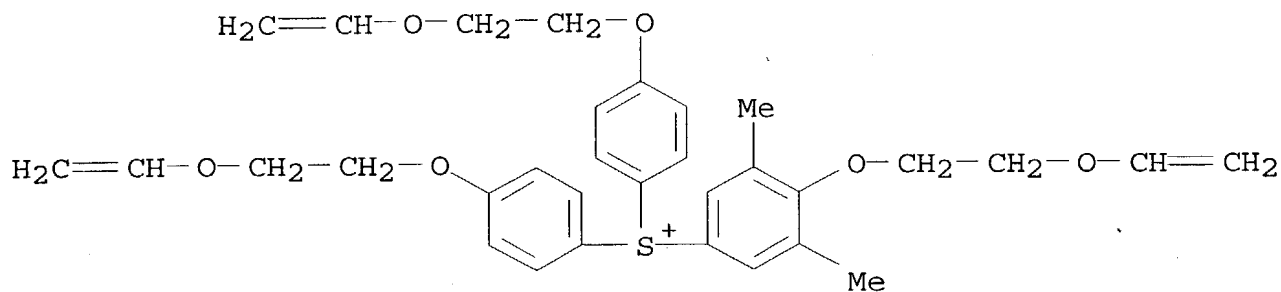
RN 320373-60-2 ZCAPLUS

CN Sulfonium, [4-[2-(ethenyloxy)ethoxy]-3,5-dimethylphenyl]bis[4-[2-(ethenyloxy)ethoxy]phenyl]-, salt with 4-methylbenzenesulfonic acid  
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 320373-59-9

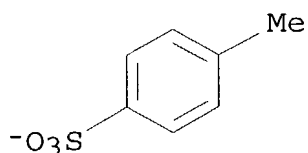
CMF C32 H37 O6 S



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



IT 320373-62-4 320373-63-5 320373-64-6

(thermal crosslinking photoacid generator; pos. photoresists  
contg. vinyloxyethoxyphenylsulfonium compds. as thermal  
crosslinking photoacid generators)

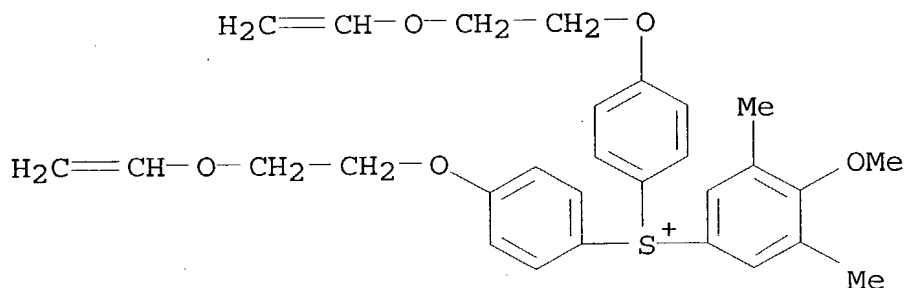
RN 320373-62-4 ZCAPLUS

CN Sulfonium, bis[4-[2-(ethenyloxy)ethoxy]phenyl] (4-methoxy-3,5-  
dimethylphenyl)-, salt with trifluoromethanesulfonic acid (1:1)  
(9CI) (CA INDEX NAME)

CM 1

CRN 320373-61-3

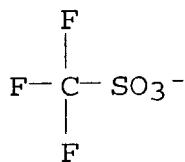
CMF C29 H33 O5 S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



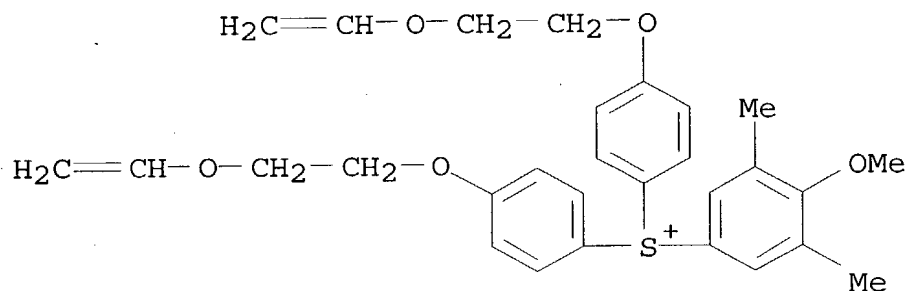
RN 320373-63-5 ZCAPLUS

CN Sulfonium, bis[4-[2-(ethenyloxy)ethoxy]phenyl] (4-methoxy-3,5-dimethylphenyl)-, methanesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 320373-61-3

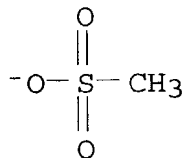
CMF C29 H33 O5 S



CM 2

CRN 16053-58-0

CMF C H3 O3 S



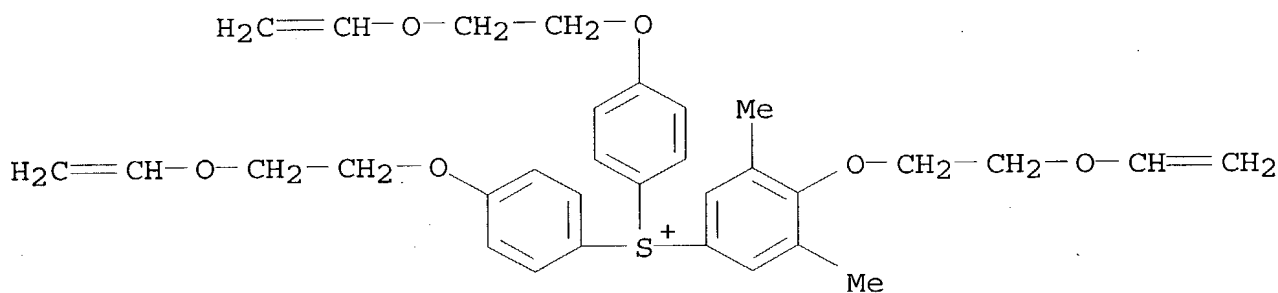
RN 320373-64-6 ZCAPLUS

CN Sulfonium, [4-[2-(ethenyloxy)ethoxy]-3,5-dimethylphenyl]bis[4-[2-(ethenyloxy)ethoxy]phenyl]-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 320373-59-9

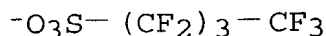
CMF C32 H37 O6 S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



IC ICM C08K005-375

ICS C08L025-18; C08L101-00; G03F007-004; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 25, 38

IT 135648-85-0, 4-Hydroxystyrene-4-methoxystyrene copolymer  
 158593-28-3, 4-[(1-Ethoxy)ethoxy]styrene-4-hydroxystyrene  
 copolymer 320373-72-6 320373-76-0, 4-Butoxystyrene-butyl  
 methacrylate-4-hydroxystyrene copolymer 320373-78-2,  
 4-[1-(Ethoxy)ethoxy]styrene-4-hydroxystyrene-4-methoxystyrene  
 copolymer

(photoresist component; pos. photoresists contg.

vinylxyethoxyphenylsulfonium compds. as thermal crosslinking  
photoacid generators)

IT 110-75-8P, 2-Chloroethylvinyl ether 657-84-1P, Sodium tosylate  
 320373-82-8P

(pos. photoresists contg. vinylxyethoxyphenylsulfonium compds.  
as thermal crosslinking photoacid generators)

IT 320373-60-2P

(thermal crosslinking photoacid generator; pos. photoresists  
contg. vinylxyethoxyphenylsulfonium compds. as thermal  
crosslinking photoacid generators)

IT 209588-31-8 320373-62-4 320373-63-5

320373-64-6 320373-65-7 320373-66-8 320373-70-4

(thermal crosslinking photoacid generator; pos. photoresists  
contg. vinyloxyethoxyphenylsulfonium compds. as thermal  
crosslinking photoacid generators)

L25 ANSWER 2 OF 3 ZCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:585594 ZCAPLUS

DOCUMENT NUMBER: 133:200844

TITLE: Positive-working photoresist composition  
containing polymer having sulfonate group  
INVENTOR(S): Sato, Kenichiro; Kodama, Kunihiro; Aogo,  
Toshiaki

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 47 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

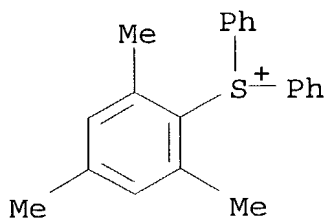
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	JP 2000231194	A2	20000822	JP 1999-240600	19990826
PRIORITY APPLN. INFO.:				JP 1998-347193	A 19981207
AB	The title photoresist compn. contains a compd. which generates an acid by irradiation with activating ray or radiation and a resin which contains a repeating unit having SO <sub>2</sub> OR group [R = alkyl, cycloalkyl, alkenyl (these groups may be substituted)] and of which the dissolution rate to alk. developing solns. increases by the action of acid. The compn. shows high sensitivity toward far UV rays, esp. KrF or ArF excimer laser beams and good developability and provides high resolution patterns with improved coarse-dense dependence.				
IT	258341-99-0 289040-06-8D, hydrolyzed 289040-31-9D, hydrolyzed 289040-34-2D, hydrolyzed 289040-37-5D, hydrolyzed 289040-44-4D, hydrolyzed (photoresist compn. contg. alkali-sol. polymer with sulfonate group)				
RN	258341-99-0 ZCAPLUS				
CN	Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)				

CM 1

CRN 47191-44-6

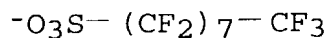
CMF C21 H21 S



CM 2

CRN 45298-90-6

CMF C8 F17 O3 S



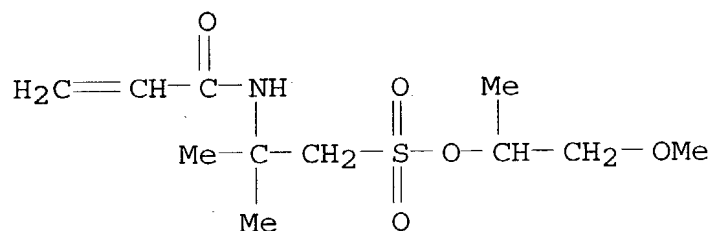
RN 289040-06-8 ZCAPLUS

CN 1-Propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propenyl)amino]-, 2-methoxy-1-methylethyl ester, polymer with 1-ethenyl-4-(1-methoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 289040-05-7

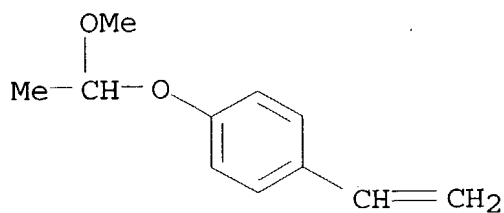
CMF C11 H21 N O5 S



CM 2

CRN 151189-10-5

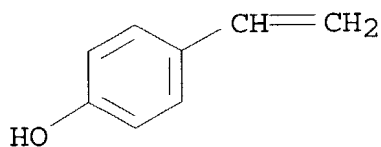
CMF C11 H14 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



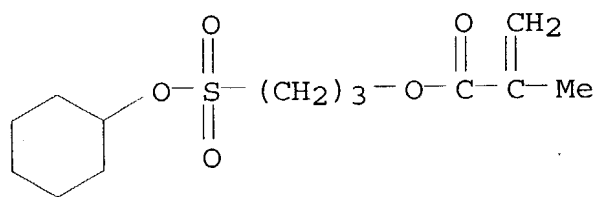
RN 289040-31-9 ZCAPLUS

CN 2-Propenoic acid, 2-methyl-, 3-[(cyclohexyloxy)sulfonyl]propyl ester, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 215958-04-6

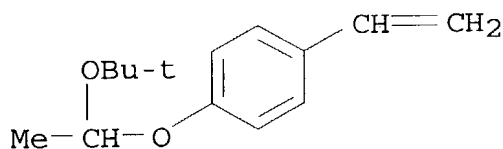
CMF C13 H22 O5 S



CM 2

CRN 169811-45-4

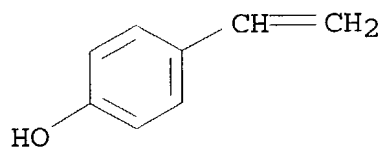
CMF C14 H20 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



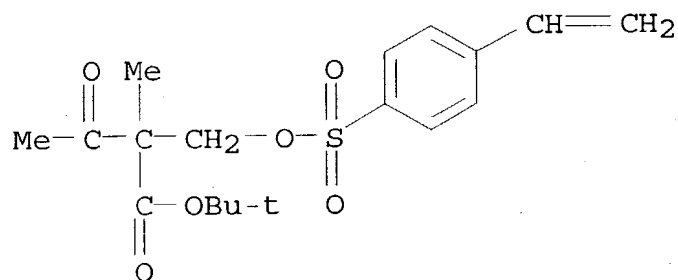
RN 289040-34-2 ZCAPLUS

CN Butanoic acid, 2-[[[(4-ethenylphenyl)sulfonyl]oxy]methyl]-2-methyl-3-oxo-, 1,1-dimethylethyl ester, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene and 4-ethenylphenol (9CI)  
(CA INDEX NAME)

CM 1

CRN 220406-43-9

CMF C18 H24 O6 S

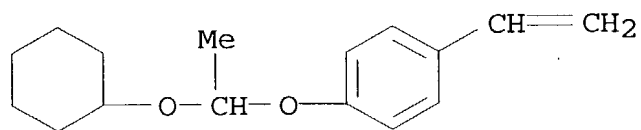


CM 2

CRN 190434-67-4

CMF C16 H22 O2

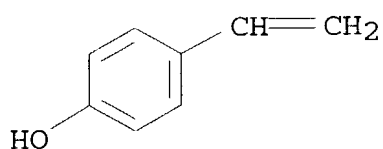




CM 3

CRN 2628-17-3

CMF C8 H8 O



RN 289040-37-5 ZCAPLUS

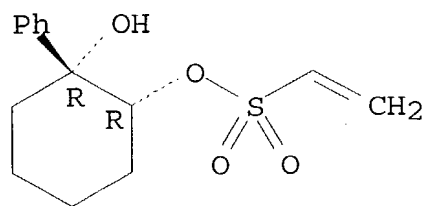
CN Ethenesulfonic acid, (1R,2R)-2-hydroxy-2-phenylcyclohexyl ester,  
rel-, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-ethenylbenzene  
and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 289040-36-4

CMF C14 H18 O4 S

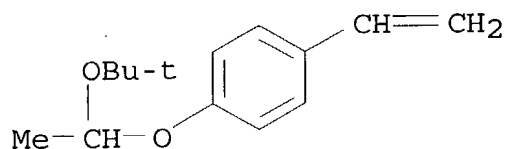
Relative stereochemistry.



CM 2

CRN 169811-45-4

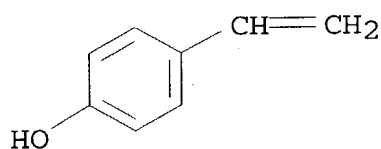
CMF C14 H20 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



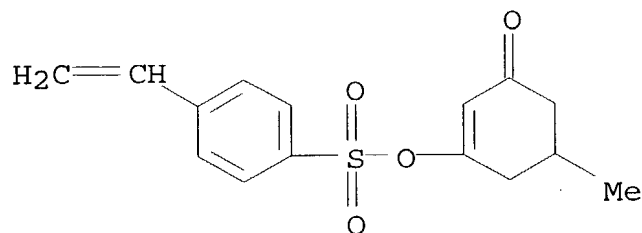
RN 289040-44-4 ZCAPLUS

CN Benzenesulfonic acid, 4-ethenyl-, 5-methyl-3-oxo-1-cyclohexen-1-yl ester, polymer with 1-ethenyl-4-(1-methoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 289040-43-3

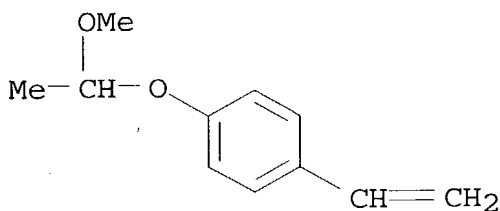
CMF C15 H16 O4 S



CM 2

CRN 151189-10-5

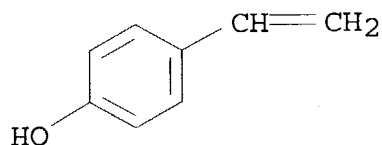
CMF C11 H14 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



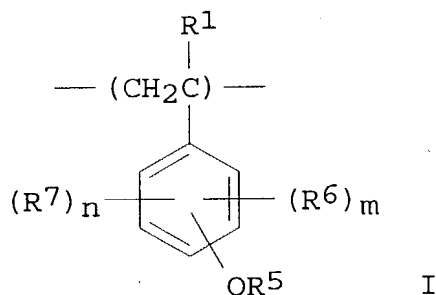
IC ICM G03F007-039  
 ICS C08F012-30; C08F020-38; C08F020-56; G03F007-004; G03F007-027;  
 H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 38

IT 66003-78-9, Triphenylsulfonium triflate 220930-80-3  
**258341-99-0** 289040-03-5D, hydrolyzed 289040-04-6D,  
 hydrolyzed **289040-06-8D**, hydrolyzed 289040-08-0D,  
 hydrolyzed 289040-09-1D, hydrolyzed 289040-11-5D, hydrolyzed  
 289040-13-7D, hydrolyzed 289040-16-0D, hydrolyzed 289040-19-3D,  
 hydrolyzed 289040-20-6D, hydrolyzed 289040-22-8D, hydrolyzed  
 289040-24-0D, hydrolyzed 289040-25-1D, hydrolyzed 289040-27-3D,  
 hydrolyzed 289040-30-8D, hydrolyzed **289040-31-9D**,  
 hydrolyzed 289040-33-1D, hydrolyzed **289040-34-2D**,  
 hydrolyzed **289040-37-5D**, hydrolyzed 289040-40-0D,  
 hydrolyzed 289040-42-2D, hydrolyzed **289040-44-4D**,  
 hydrolyzed 289040-46-6D, hydrolyzed 289040-48-8D, hydrolyzed  
 289040-50-2D, hydrolyzed 289040-52-4D, hydrolyzed 289040-56-8D,  
 hydrolyzed 289040-58-0 289040-59-1 289040-60-4 289040-61-5  
 289040-63-7 289040-64-8 289040-66-0 289040-68-2 289040-70-6  
 289040-72-8 289045-64-3 289045-67-6 289045-68-7 289045-69-8  
 289045-70-1  
 (photoresist compn. contg. alkali-sol. polymer with sulfonate  
 group)

DOCUMENT NUMBER: 131:293308  
 TITLE: Positively working photoresist composition  
 containing acid-generating compound  
 INVENTOR(S): Aogo, Toshiaki; Mizutani, Kazuyoshi; Tan, Shiro  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 53 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11282163	A2	19991015	JP 1998-79458	19980326
PRIORITY APPLN. INFO.: GI			JP 1998-79458	19980326



AB The material contains a compd. generating acid under exposure to active lights or radioactive rays and a resin with repeating units I and [CH<sub>2</sub>C(R<sub>1</sub>)CO<sub>2</sub>CR<sub>2</sub>R<sub>3</sub>R<sub>4</sub>] [R<sub>1</sub> = H, Me; R<sub>2</sub>, R<sub>3</sub> = H, (substituted) alkyl, (substituted) aryl; R<sub>4</sub> = cycloalkyl, alkenyl, alkynyl, aralkyl, aryl, where they may be substituted; R<sub>5</sub> = H, CR<sub>8</sub>R<sub>9</sub>R<sub>10</sub>, CR<sub>11</sub>R<sub>12</sub>OR<sub>13</sub>; R<sub>8</sub>-12 = H, (substituted) alkyl, (substituted) cycloalkyl, (substituted) alkenyl, (substituted) alkynyl, (substituted) aryl; R<sub>13</sub> = alkyl, cycloalkyl, aryl; R<sub>6</sub>, R<sub>7</sub> = halo, OH, (substituted) alkyl, (substituted) aryl, (substituted) aralkyl, (substituted) alkoxy, (substituted) acyl, (substituted) acyloxy; two of each R<sub>2</sub>-4, R<sub>8</sub>-10, and R<sub>11</sub>-13 may form a ring; m, n = 0-3]. The material shows high sensitivity and improved resolving power and improved pattern profile because of no change of pattern shapes and sensitivity under exposure.

IT 240424-21-9

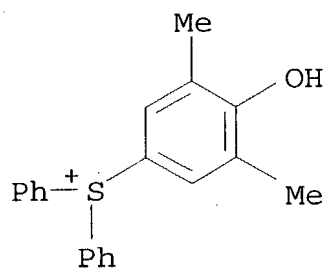
(acid-generating agent; pos.-working photoresist contg. acrylic hydroxystyrene polymer and acid-generating agent with improved resolving power and pattern profile)

RN 240424-21-9 ZCAPLUS  
 CN Sulfonium, (4-hydroxy-3,5-dimethylphenyl)diphenyl-, salt with  
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA  
 INDEX NAME)

CM 1

CRN 127279-85-0

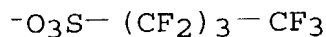
CMF C20 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



IT 246157-34-6 246157-36-8 246157-38-0  
 246157-40-4 246157-41-5 246157-43-7  
 246157-45-9 246157-46-0

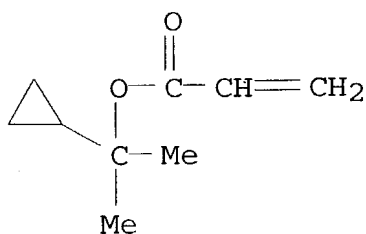
(pos.-working photoresist contg. acrylic hydroxystyrene polymer  
 and acid-generating agent with improved resolving power and  
 pattern profile)

RN 246157-34-6 ZCAPLUS  
 CN 2-Propenoic acid, 1-cyclopropyl-1-methylethyl ester, polymer with  
 1-ethenyl-4-(1-ethoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA  
 INDEX NAME)

CM 1

CRN 246157-33-5

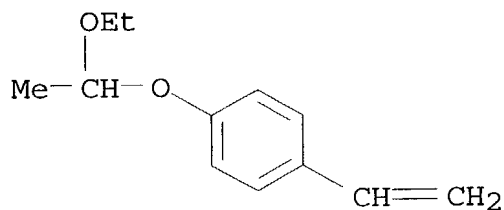
CMF C9 H14 O2



CM 2

CRN 157057-20-0

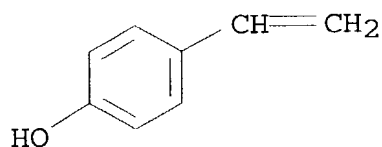
CMF C12 H16 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



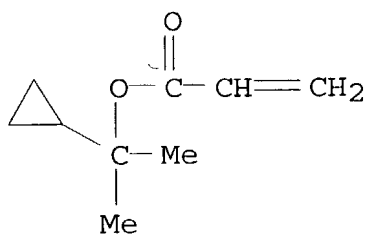
RN 246157-36-8 ZCAPLUS

CN 2-Propenoic acid, 1-cyclopropyl-1-methylethyl ester, polymer with  
1-ethenyl-4-[1-(2-methylpropoxy)ethoxy]benzene and 4-ethenylphenol  
(9CI) (CA INDEX NAME)

CM 1

CRN 246157-33-5

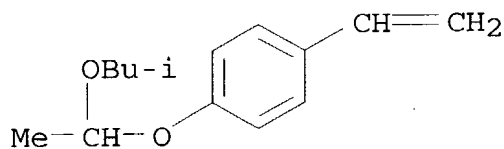
CMF C9 H14 O2



CM 2

CRN 192314-53-7

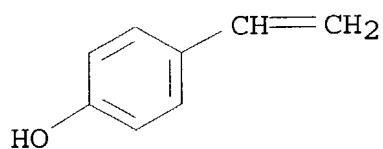
CMF C14 H20 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



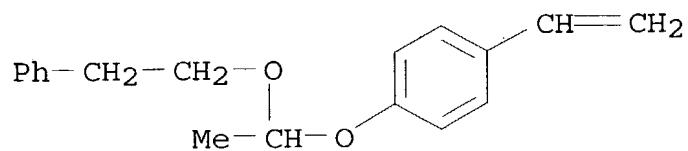
RN 246157-38-0 ZCAPLUS

CN 2-Propenoic acid, 1-cyclopropyl-1-methylethyl ester, polymer with  
4-ethenylphenol and 1-ethenyl-4-[1-(2-phenylethoxy)ethoxy]benzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 246157-37-9

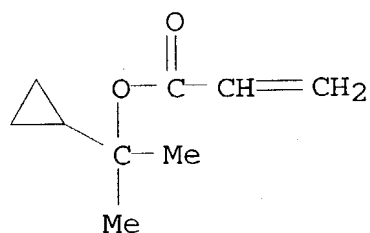
CMF C18 H20 O2



CM 2

CRN 246157-33-5

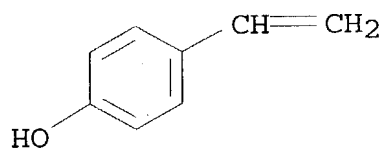
CMF C9 H14 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



RN 246157-40-4 ZCAPLUS

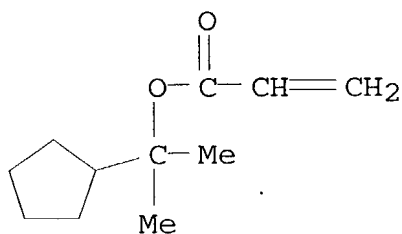
CN 2-Propenoic acid, 1-cyclopentyl-1-methylethyl ester, polymer with  
1-ethenyl-4-(1-ethoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA  
INDEX NAME)

CM 1

CRN 246157-39-1

CMF C11 H18 O2

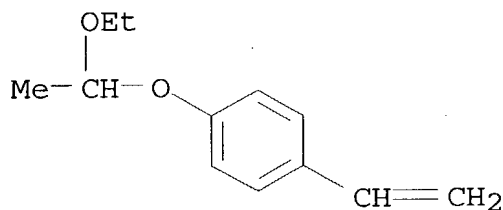




CM 2

CRN 157057-20-0

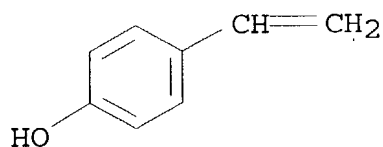
CMF C12 H16 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



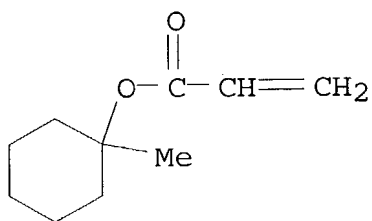
RN 246157-41-5 ZCAPLUS

CN 2-Propenoic acid, 1-methylcyclohexyl ester, polymer with  
1-ethenyl-4-(1-ethoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA  
INDEX NAME)

CM 1

CRN 178889-47-9

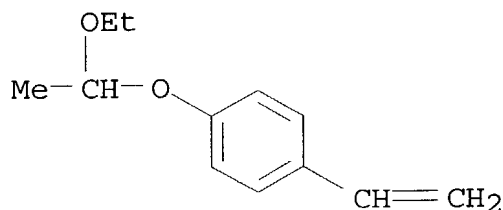
CMF C10 H16 O2



CM 2

CRN 157057-20-0

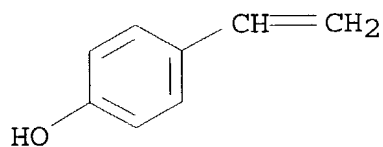
CMF C12 H16 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



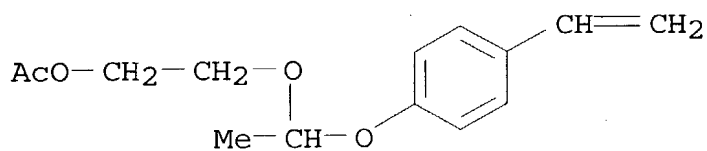
RN 246157-43-7 ZCAPLUS

CN 2-Propenoic acid, 1,1-dimethyl-2-propenyl ester, polymer with  
4-ethenylphenol and 2-[1-(4-ethenylphenoxy)ethoxy]ethyl acetate  
(9CI) (CA INDEX NAME)

CM 1

CRN 246157-42-6

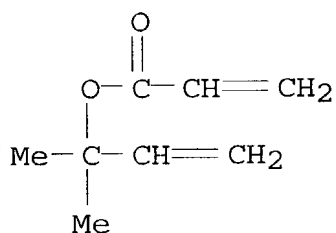
CMF C14 H18 O4



CM 2

CRN 120880-88-8

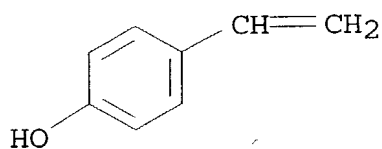
CMF C8 H12 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



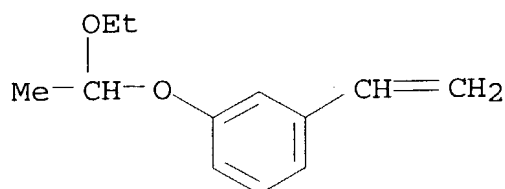
RN 246157-45-9 ZCAPLUS

CN 2-Propenoic acid, 1-cyclopropyl-1-methylethyl ester, polymer with  
1-ethenyl-3-(1-ethoxyethoxy)benzene and 3-ethenylphenol (9CI) (CA  
INDEX NAME)

CM 1

CRN 246157-44-8

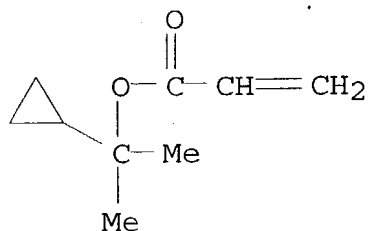
CMF C12 H16 O2



CM 2

CRN 246157-33-5

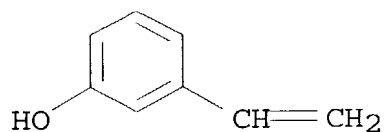
CMF C9 H14 O2



CM 3

CRN 620-18-8

CMF C8 H8 O



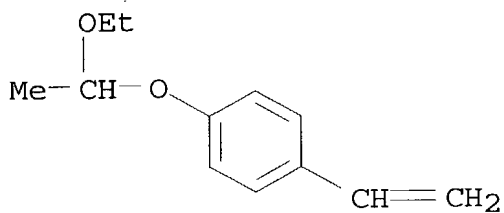
RN 246157-46-0 ZCAPLUS

CN 2-Propenoic acid, 1,1-dimethyl-2-propenyl ester, polymer with  
ethenylbenzene, 1-ethenyl-4-(1-ethoxyethoxy)benzene and  
4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

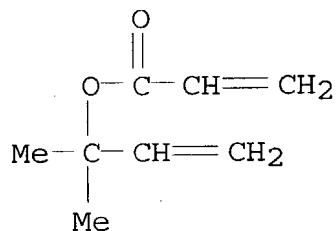
CMF C12 H16 O2



CM 2

CRN 120880-88-8

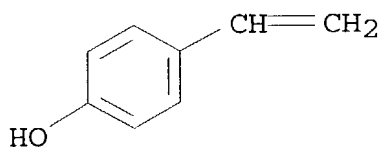
CMF C8 H12 O2



CM 3

CRN 2628-17-3

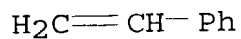
CMF C8 H8 O



CM 4

CRN 100-42-5

CMF C8 H8



IC ICM G03F007-039

ICS C08F220-18; C08K005-00; C08L025-18; C08L031-02; C08L101-00;

H01L021-027; C08F212-14  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 38  
IT 144317-44-2 194999-85-4 197447-16-8 207464-07-1 240424-20-8  
240424-21-9  
(acid-generating agent; pos.-working photoresist contg. acrylic  
hydroxystyrene polymer and acid-generating agent with improved  
resolving power and pattern profile)  
IT 246157-34-6 246157-36-8 246157-38-0  
246157-40-4 246157-41-5 246157-43-7  
246157-45-9 246157-46-0  
(pos.-working photoresist contg. acrylic hydroxystyrene polymer  
and acid-generating agent with improved resolving power and  
pattern profile)

=> d l46 1-15 cbib abs hitstr hitind

L46 ANSWER 1 OF 15 ZCAPLUS COPYRIGHT 2003 ACS  
2003:111380 Radiation-sensitive positive-working resist resin  
composition. Kai, Toshiyuki; Saito, Akio (JSR Ltd., Japan). Jpn.  
Kokai Tokkyo Koho JP 2003043679 A2 20030213, 20 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 2001-232347 20010731.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The title compn. contains a radiation-sensitive acid-generator and  
an alkali-insol. or hardly sol. resin, wherein the acid generator  
has structure I ( R1-15 = H, OH, C1-10 alkyl, C1-10 alkoxyl,  
tert-butoxycarbonylmethoxy; R16-20 = H, F, F3C) or II(R21-30 = H,  
OH, C1-10 alkyl, C1-10 alkoxyl, tert-butoxycarbonylmethoxy; R31-35 =  
H, F, F3C) and wherein the resin has repeating unit III(R36 =  
mono-valent orgs.; n = 1-3 integer; m = 0-3 integer) and a repeating  
unit having acid-sensitive leaving groups. The compn. constantly  
provides radiation resists of improved edge-roughness, high etching  
resistance, high sensitivity, high resoln., and high precision.

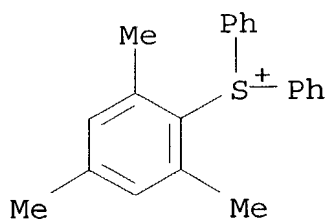
IT 350251-56-8P 431059-71-1P 431059-72-2P  
(acid-generator; radiation-sensitive resist resin compn.)

RN 350251-56-8 ZCAPLUS  
CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with  
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6

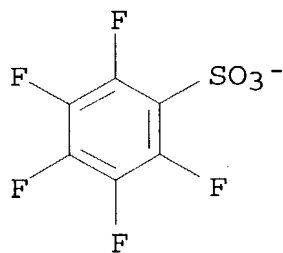
CMF C21 H21 S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



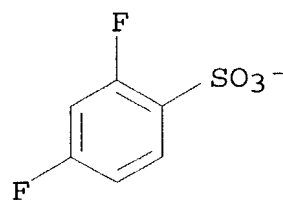
RN 431059-71-1 ZCAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with  
2,4-difluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 320738-84-9

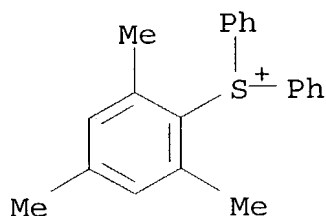
CMF C6 H3 F2 O3 S



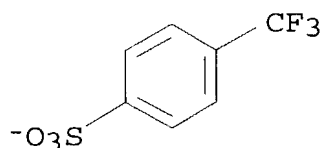
CM 2

CRN 47191-44-6

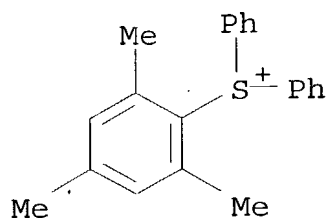
CMF C21 H21 S



RN 431059-72-2 ZCAPLUS  
 CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with  
 4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 120998-63-2  
 CMF C7 H4 F3 O3 S



CM 2  
 CRN 47191-44-6  
 CMF C21 H21 S



IC ICM G03F007-004  
 ICS G03F007-004; G03F007-039; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 35  
 IT 220122-68-9P 320738-85-0P 335199-98-9P 350251-56-8P  
 431059-71-1P 431059-72-2P  
 (acid-generator; radiation-sensitive resist resin compn.)

L46 ANSWER 2 OF 15 ZCAPLUS COPYRIGHT 2003 ACS



2003:58682 Document No. 138:129005 Electron beam and UV lithographic pattern formation method using chemically-amplified resist. Endo, Masayuki; Sasago, Masaru (Matsushita Electric Industrial Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2003017425 A1 20030123, 28 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-166247 20020611. PRIORITY: JP 2001-189262 20010622.

AB A resist film with a thickness of 250 nm or less is formed on a semiconductor substrate from a pos. chem. amplified resist material including a base polymer whose soly. in an alk. developer is changed by a function of an acid and an acid generator that has at least one electron attractive group introduced into a meta-position of an arom. ring included in a counter anion and generates an acid through irradiation with electron beams. The resist film is subjected to pattern exposure by irradiating with electron beams or extreme UV of a wavelength of a 1-30 nm band. The resist film is developed after the pattern exposure, thereby forming a resist pattern. The invention provides a pattern formation method in which lowering of resolu. can be suppressed by preventing lowering of contrast in soly. even when a resist film has a thickness smaller than 250 nm.

IT 350251-56-8P 488820-72-0P

(acid generator; electron beam and UV lithog. pattern formation method using chem.-amplified resist)

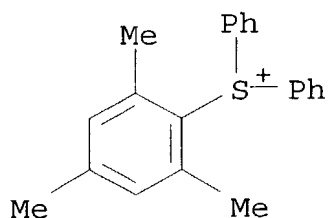
RN 350251-56-8 ZCAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6

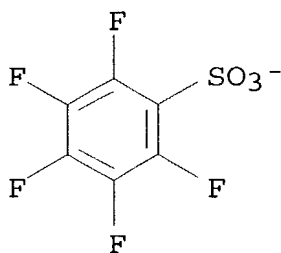
CMF C21 H21 S



CM 2

CRN 46377-88-2

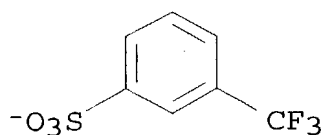
CMF C6 F5 O3 S



RN 488820-72-0 ZCAPLUS  
 CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with  
 3-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

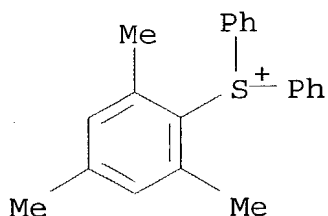
CM 1

CRN 104994-84-5  
 CMF C7 H4 F3 O3 S



CM 2

CRN 47191-44-6  
 CMF C21 H21 S



IC ICM G03F007-40  
 NCL 430322000; 430330000; 430296000  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 38  
 IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate  
**350251-56-8P** 389859-76-1P 488820-71-9P  
**488820-72-0P** 488820-73-1P 488820-74-2P 488820-75-3P  
 (acid generator; electron beam and UV lithog. pattern formation)

method using chem.-amplified resist)

L46 ANSWER 3 OF 15 ZCAPLUS COPYRIGHT 2003 ACS

2003:58365 Document No. 138:129004 Positive-working resist compositions containing specific rein and acid generator for semiconductor device fabrication. Maesawa, Tsuneaki; Urano, Fumiyoshi (Wako Pure Chemical Industries, Ltd., Japan). PCT Int. Appl. WO 2003007079 A1 20030123, 100 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2002-JP6218 20020621. PRIORITY: JP 2001-189003 20010622.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention relates to a practical resist compns. which have high resoln., high sensitivity and good pattern profile suitable for electron beam microlithog. or the like and do not cause outgassing even when irradiated with an actinic radiation under high vacuum. Namely, (1) a resist compn. composed essentially of at least one polymer comprising monomer units represented by the general formula I ( $R_1 =$  ), monomer units represented by the general formula I-II ( $R_1 =$  ;  $R_2 =$  ), and monomer units represented by the general formula  $[-CH_2-C(R_1)(COOR_3)-]$  ( $R_1 =$  ;  $R_3 =$  ): I, II,  $[-CH_2-C(R_1)(COOR_3)-]$ , at least one compd. represented by the general formula III ( $R_9-10 =$  ;  $R_4-8 =$  ) which generates an acid by irradiation: III an org. basic compd., and a solvent; (2) a resist compn. as set forth in item (1) which further contains a polymer represented by the general formula IV ( $R_1 =$  ;  $R_{11} =$  ): IV and (3) a resist compn. as set forth in item (1) or (2) which further contains a compd. represented by the general formula V ( $R_{12} =$  ) which generates an acid by irradiation: V.

IT 350251-56-8P 488820-72-0P

(pos.-working resist compns. contg. specific rein and acid generator for semiconductor device fabrication)

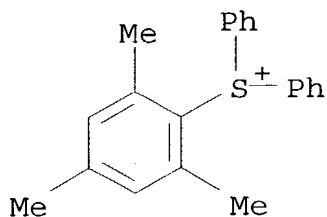
RN 350251-56-8 ZCAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6

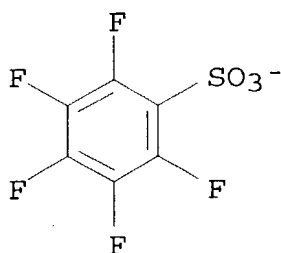
CMF C21 H21 S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



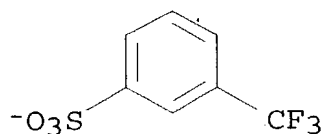
RN 488820-72-0 ZCAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with  
3-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 104994-84-5

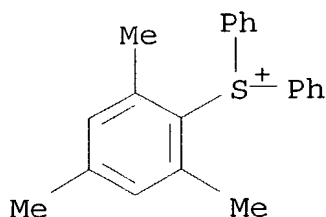
CMF C7 H4 F3 O3 S



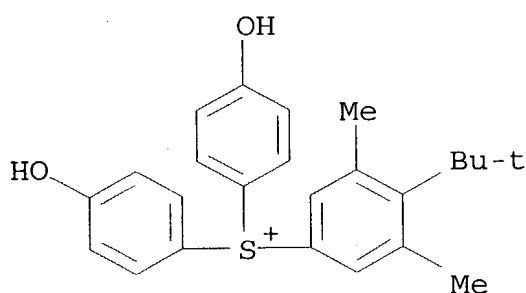
CM 2

CRN 47191-44-6

CMF C21 H21 S



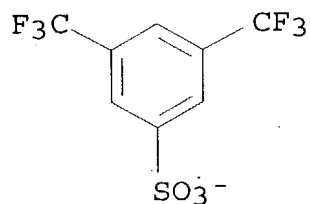
- IC ICM G03F007-039  
ICS H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76
- IT **350251-56-8P 488820-72-0P 488820-76-4P,**  
Iodonium, bis(4-methylphenyl)-, nonafluorobutanesulfonate  
488820-78-6P  
(pos.-working resist compns. contg. specific rein and acid generator for semiconductor device fabrication)
- L46 ANSWER 4 OF 15 ZCAPLUS COPYRIGHT 2003 ACS  
2002:963783 Document No. 138:47312 Positive resist composition. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1267210 A2 20021218, 69 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP 2002-12454 20020611. PRIORITY: JP 2001-177158 20010612; JP 2001-308717 20011004.
- AB A pos. resist compn. comprises: (A) a resin capable of increasing the soly. in an alkali developer by the action of acid, in which the resin contains (A1) a repeating unit having at least one of a dihydroxyadamantyl group and a trihydroxyadamantyl group and (A2) a repeating unit contg. an acid-decomposable group having an alicyclic structure; and (B) a compd. capable of generating an acid upon irradiation with one of an actinic ray and a radiation. The resin (A) contains the repeating unit (A1) and the repeating unit (A2) at a compn. molar ratio: A1/A2 of 0.15-1.0, and a total content of the repeating unit (A1) and the repeating unit (A2) in the resin (A) is 40-70 mol.
- IT **478837-92-2**  
(photoacid generator; pos. photoresist compn. contg.)
- RN 478837-92-2 ZCAPLUS
- CN Sulfonium, [4-(1,1-dimethylethyl)-3,5-dimethylphenyl]bis(4-hydroxyphenyl)-, salt with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)
- CM 1
- CRN 478837-91-1
- CMF C24 H27 O2 S



CM 2

CRN 213740-84-2

CMF C8 H3 F6 O3 S



IC ICM G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38

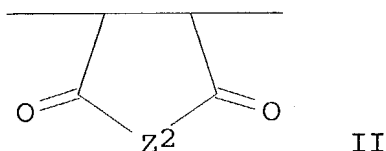
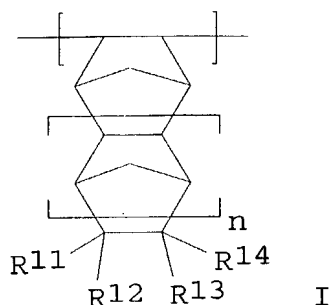
IT 66003-78-9 138529-81-4 144089-15-6 144317-44-2 206861-54-3  
 258341-99-0 258342-00-6 258872-05-8 284474-28-8 301153-78-6  
 301525-08-6 301664-71-1 307531-76-6 347193-28-6 391232-40-9  
 398141-23-6 414911-52-7 454471-06-8 454471-15-9 474510-73-1  
 478837-88-6 478837-92-2 478854-81-8

(photoacid generator; pos. photoresist compn. contg.)

L46 ANSWER 5 OF 15 ZCAPLUS COPYRIGHT 2003 ACS

2002:539335 Document No. 137:101423 Storage-stable chemically amplified far-UV positive photoresist compositions suitable for half-tone phase-shift photomasks. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002202605 A2 20020719, 80 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-402244 20001228.

GI



AB The resist compns. comprise (A) photoacid generators  
 $[C_6H_5-lRs_4lS(C_6H_5-nRs_6n)C_6H_5-mRs_5m]+Xs^-$  ( $Rs_4, Rs_5, Rs_6$  = alkyl, cycloalkyl, alkoxy, OH, etc.;  $l = 1-5$ ;  $m, n = 0-5$ ;  $Xs^- = RSO_3^-$ ;  $R$  = aliph. or arom. hydrocarbon group) and (B) resins comprising repeating units I ( $R_{11-14}$  = acid-decomposable group, H, halo, cyano, COOH, etc.;  $n = 0, 1$ ), II ( $Z_2 = O, NR_{41}$ ;  $R_{41} = H, OH, alkyl, haloalkyl, OSO_2R_{42}$ ;  $R_{42} = alkyl, haloalkyl, etc.$ ), and  $CH_2CR_{91}COX_5BR_{92}$  ( $R_{91} = H, lower\ alkyl, halo, CN$ ;  $X_5 = O, S, NR_{93}, NR_{93}SO_2$ ;  $R_{93} = H, alkyl$ ;  $B$  = single bond, linking group;  $R_{92} = H, alkyl, alkoxy, OH, etc.$ ), wherein the resins become alkali-sol. by acid decompn.

IT 350251-56-8

(photoacid generator; storage-stable far-UV pos. photoresists contg. triphenylsulfonium photoacid generators for half-tone phase-shift photomasks)

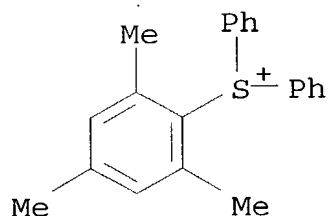
RN 350251-56-8 ZCAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6

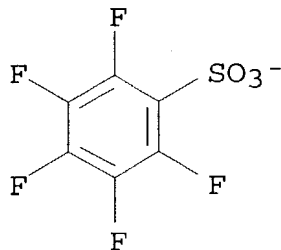
CMF C21 H21 S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



IC ICM G03F007-039  
 ICS C08F220-00; C08F222-00; C08F232-00; C08K005-00; C08K005-36;  
 C08L033-00; C08L035-00; C08L045-00; G03F007-004; G03F007-033;  
 H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)

IT 85342-62-7 133710-62-0 138529-84-7 145612-66-4 157089-26-4  
 168634-96-6 177786-96-8 220155-94-2 241806-75-7 252937-66-9  
 260061-58-3 279218-73-4 279218-74-5 307531-76-6  
**350251-56-8** 350251-57-9 357444-20-3 442682-20-4  
 (photoacid generator; storage-stable far-UV pos. photoresists  
 contg. triphenylsulfonium photoacid generators for half-tone  
 phase-shift photomasks)

L46 ANSWER 6 OF 15 ZCAPLUS COPYRIGHT 2003 ACS  
 2002:464506 Document No. 137:54616 Positive-working photoresist  
 composition for semiconductor device fabrication. Sasaki, Tomoya;  
 Mizutani, Kazuyoshi; Yasunami, Shoichiro (Fuji Photo Film Co., Ltd.,  
 Japan). Jpn. Kokai Tokkyo Koho JP 2002174903 A2 20020621, 48 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-373077 20001207.

AB The title compn. contains a resin increasing soly. in alk. developer  
 by an acid and a radiation- or actinic ray -sensitive acid  
 generator, wherein the resin has repeating unit [-COO-C(R1)(R2)-  
 {C(R3)(R4)}m1-Si(R5)(R6)(R7)] ( m1 = 1-6 integer; R1-2 = alkyl; R3-4  
 = H, alkyl; R5-7 = alkyl, aryl, allyl, etc.) and  
 [-CH2-C(Y){L2-COO-C(R1)(R2)-{C(R3)(R4)}m1-Si(R5)(R6)(R7)}] ( Y = H,  
 Me, cyano, Cl; m1 = 1-6 integer; R1-2 = alkyl; R3-4 = H, alkyl; R5-7  
 = alkyl, aryl, allyl, etc.). The compn. provides the high resolu.  
 and the good pattern edge characteristics.

IT **350251-56-8**  
 (acid generator in pos.-working photoresist compn. for  
 semiconductor device fabrication)

RN 350251-56-8 ZCAPLUS

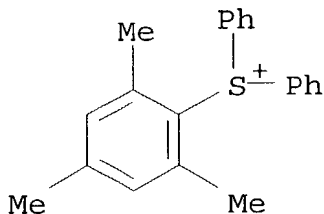
CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with  
 pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6



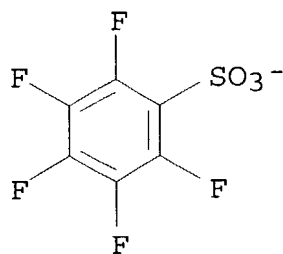
CMF C21 H21 S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



IC ICM G03F007-039

ICS C08K005-00; C08K005-42; C08L101-02; G03F007-075; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 76

IT 258341-99-0 260061-58-3 301525-08-6 350251-56-8

(acid generator in pos.-working photoresist compn. for semiconductor device fabrication)

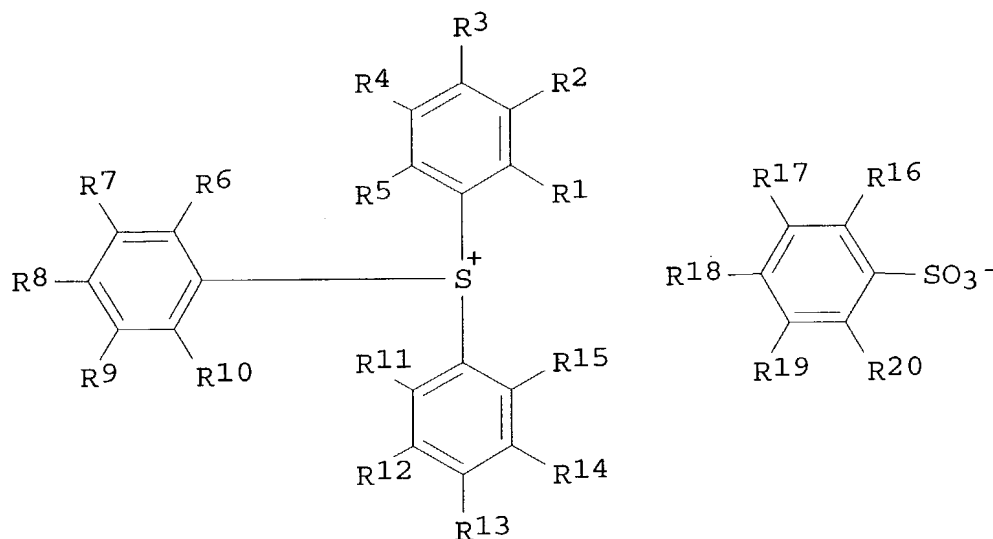
L46 ANSWER 7 OF 15 ZCAPLUS COPYRIGHT 2003 ACS

2002:407173 Document No. 136:409029 Chemically amplified

radiation-sensitive resists with small nanoedge roughness. Suzuki, Aki; Murata, Makoto; Hara, Hiromichi; Kobayashi, Eiichi (Jsr Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002156759 A2 20020531, 28 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-350227 20001116.

GI

Priority Document



AB The resists, suited for microlithog. in fabrication of integrated circuit devices, contain triarylsulfonium compds. I [R1-15 = H, OH, C1-10 alkyl(oxy), tert-butoxycarbonylmethoxy; .gtoreq.2 of R1-5 and .gtoreq.2 of R6-15 are groups excluding H; R16-20 = H, F, CF3; .gtoreq.1-5 of R16-20 are F or CF3] as radiation-sensitive acid generators and resins having 4-hydroxystyrene units and [HC[p-C6H4OHR21(OR22)]CH2] (R21 = Me, Et; R22 = C1-6 alkyl).

IT 431059-71-1 431059-72-2 431059-74-4  
431059-77-7

(acid generators; chem. amplified radiation-sensitive resists contg. sp. arylsulfonium compds. and showing small edge roughness)

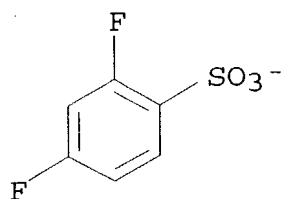
RN 431059-71-1 ZCAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with 2,4-difluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 320738-84-9

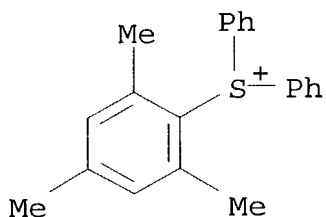
CMF C6 H3 F2 O3 S



CM 2

CRN 47191-44-6

CMF C21 H21 S



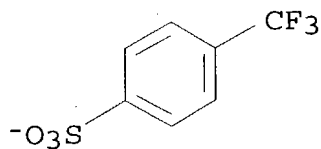
RN 431059-72-2 ZCAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with  
4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 120998-63-2

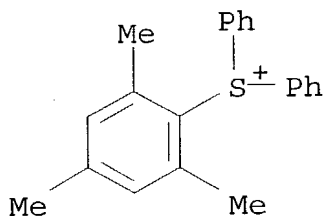
CMF C7 H4 F3 O3 S



CM 2

CRN 47191-44-6

CMF C21 H21 S



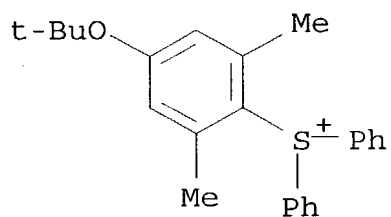
RN 431059-74-4 ZCAPLUS

CN Sulfonium, [4-(1,1-dimethylethoxy)-2,6-dimethylphenyl]diphenyl-,  
salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX  
NAME)

CM 1

CRN 431059-73-3

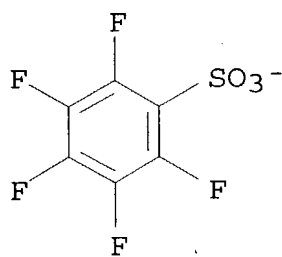
CMF C24 H27 O S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



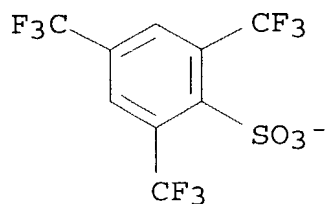
RN 431059-77-7 ZCAPLUS

CN Sulfonium, [4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]-2,6-dimethylphenyl]diphenyl-, salt with 2,4,6-tris(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 431059-76-6

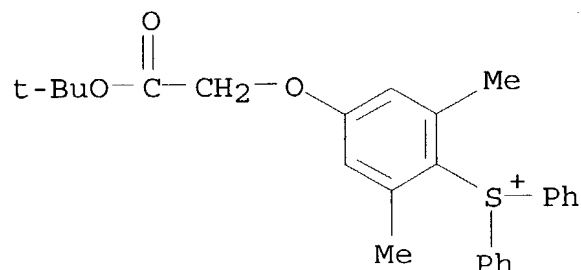
CMF C9 H2 F9 O3 S



CM 2

CRN 431059-75-5

CMF C26 H29 O3 S



IC ICM G03F007-039

ICS C08K005-375; C08K005-42; C08L025-18; C09K003-00; G03F007-004;  
H01L021-027CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)

Section cross-reference(s): 38, 76

IT 431059-71-1 431059-72-2 431059-74-4  
431059-77-7(acid generators; chem. amplified radiation-sensitive resists  
contg. sp. arylsulfonium compds. and showing small edge  
roughness)

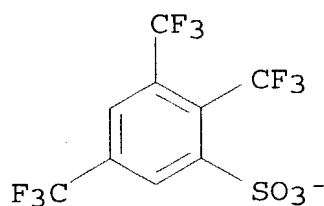
L46 ANSWER 8 OF 15 ZCAPLUS COPYRIGHT 2003 ACS

2002:236319 Document No. 136:270574 Positive-working chemically  
amplified photoresist composition containing specific acid  
generator. Fujimori, Toru; Kodama, Kunihiro; Kanna, Shinichi;  
Nishiyama, Fumiyuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 2002090988 A2 20020327, 60 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2000-283823 20000919.AB The title compn. has a resin increasing soly. in an alkali by  
reacting with an acid and an actinic ray- or radiation-sensitive  
acid generator, wherein the acid generator generates a sulfonic acid  
having arom. ring with a F-contg. substituent. The compn. provides  
photoresist of the smooth surface without a foreign material and

good pattern profile.  
 IT 405284-04-0P  
 (pos.-working chem. amplified photoresist compn. contg. specific  
 acid generator)  
 RN 405284-04-0 ZCAPLUS  
 CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with  
 2,3,5-tris(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA  
 INDEX NAME)

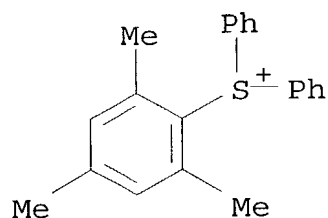
CM 1

CRN 405284-02-8  
 CMF C9 H2 F9 O3 S



CM 2

CRN 47191-44-6  
 CMF C21 H21 S

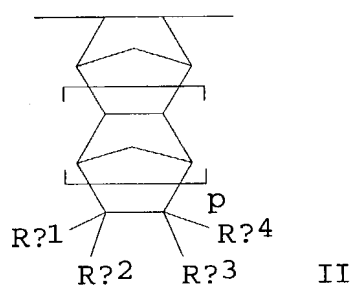
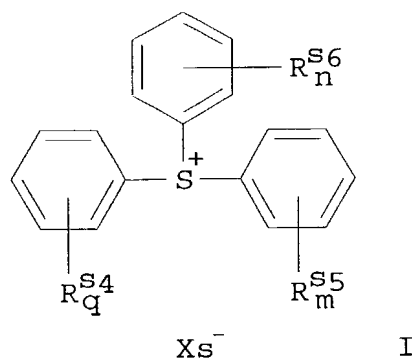


IC ICM G03F007-004  
 ICS G03F007-004; C08K005-00; C08K005-42; C08L025-18; C08L101-00;  
 G03F007-039; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 IT 387382-50-5P 405283-97-8P 405283-99-0P 405284-01-7P  
 405284-03-9P 405284-04-0P 405284-05-1P 405284-06-2P  
 405284-07-3P 405284-08-4P  
 (pos.-working chem. amplified photoresist compn. contg. specific  
 acid generator)

L46 ANSWER 9 OF 15 ZCAPLUS COPYRIGHT 2003 ACS

2002:65853 Document No. 136:126558 Positive-working photoresist composition containing specific resin and photoacid generator. Nakao, Hajime; Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002023376 A2 20020123, 52 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-208514 20000710.

GI



AB The title compn. contains a resin becoming sol. in an alkali developer by an acid and a photoacid generator, wherein the resin has re repeating unit I ( Rn1-n4 = H, alkyl; p = 0,1) and [-CH2-C(Rn5)(-A-COOW)] ( Rn5 = H, methyl; A = single bond, alkylene, ether, etc.; W = alkyl group substituted with halo or group contg. carbonyl) and wherein the photoacid generator has structure II ( Rs4-s6 = alkyl, alkoxy, alkoxy carbonyl, etc.; q = 0-5; n,m = 0-5, q+m+n =1; Xs- = R - SO3-; R = aliph. hydrocarbon, arom. hydrocarbon). The compn., which contains the aforementioned resin and photoacid generator, shows the good storageability and provides the wide margin of the exposure, the improved pattern edge roughness and the high resoln.

IT 350251-56-8

(photoacid generator in pos. working photoresist compn.)

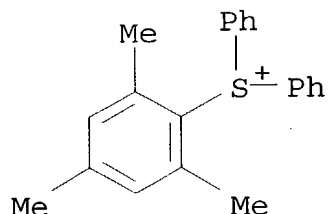
RN 350251-56-8 ZCAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME) }

CM 1

CRN 47191-44-6

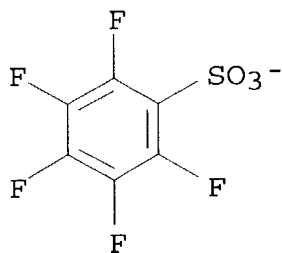
CMF C21 H21 S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



IC ICM G03F007-039

ICS C08F220-10; C08F222-00; C08F232-00; C08K005-00; C08L033-04;  
C08L035-00; C08L045-00; G03F007-004; H01L021-027CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)

Section cross-reference(s): 35

IT	39153-56-5	85342-62-7	133710-62-0	138529-81-4	138529-84-7
	144089-15-6	144317-44-2	161453-44-7	194999-82-1	206861-54-3
	241806-75-7	249890-04-8	258341-95-6	258342-00-6	258872-05-8
	297742-41-7	301525-08-6	312386-77-9	<b>350251-56-8</b>	
	391232-40-9	391232-41-0	391232-43-2	391232-45-4	

(photoacid generator in pos. working photoresist compn.)

L46 ANSWER 10 OF 15 ZCAPLUS COPYRIGHT 2003 ACS

2001:726601 Document No. 135:280511 Positive-working photoresist compositions showing high resolution and high sensitivity and excellent storage stability. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001272784 A2 20011005, 62 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-385724 20001219. PRIORITY: JP 1999-363302 19991221; JP 2000-10773



20000119; JP 2000-10774 20000119.

AB The compns. contain (A) compds. generating acid on irradiation of actinic ray or radiation, (B) polymers containing structural repeating unit  $\text{CO}_2\text{CR}_1\text{R}_2(\text{CR}_3\text{R}_4)_m\text{SiR}_5\text{R}_6\text{R}_7$  ( $\text{R}_1\text{-2} = (\text{cyclic}) \text{ alkyl}$ ;  $\text{R}_3\text{-4} = \text{H}$ , ( $\text{cyclic}) \text{ alkyl}$ ;  $\text{R}_1 + \text{R}_2$ ,  $\text{R}_3 + \text{R}_4$  may form cyclic alkyl;  $\text{R}_5\text{-7} = (\text{cyclic}) \text{ alkyl}$ , aryl, trialkylsilyl(oxy);  $m = \text{integer of } 1\text{-}6$ ) and increasing solubility in alk. developing agents by reaction with acids, (C) org. basic compounds, and (D) containing F-containing surfactants, Si-containing surfactants, and nonionic surfactants. Preferable structural repeating units also contained in the polymers are given in Markush. Also claimed are (1) compounds consisting of (A') acid-generating sulfonium salts  $\text{Rs}_1\text{S}^+\text{Rs}_2\text{Rs}_3 \text{Z}^-$  ( $\text{Rs}_1\text{-3} = (\text{un})\text{substituted alkyl or aryl}$ ;  $\text{Rs}_1 + \text{Rs}_2$  may bond via single bond or bonding group;  $\text{Z}^- = \text{anion}$ ) and polymers B and (2) compounds consisting of acid generators A, polymers B, and certain surfactants given in the document. The compounds are useful in manufacture of semiconductor devices, printed circuits, liquid crystal panels, etc.

IT 350251-56-8P

(acid generator; alk.-developing silyl-containing polymer positive photoresists having storage stability)

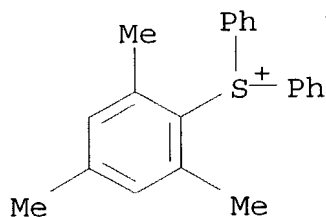
RN 350251-56-8 ZCAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6

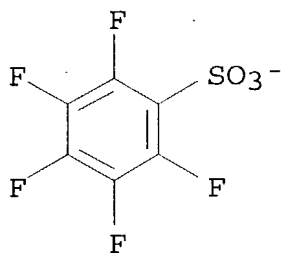
CMF C21 H21 S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S

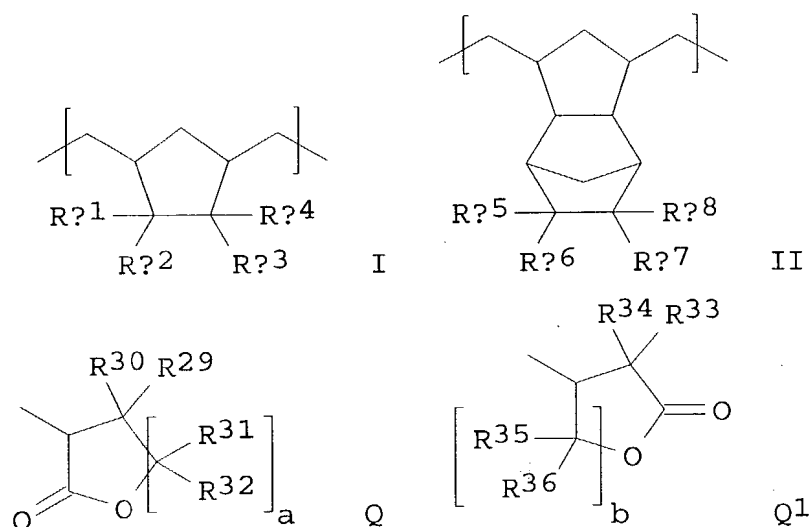


IC ICM G03F007-039  
 ICS C08K005-00; C08L101-08; G03F007-004; G03F007-075; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 38  
 IT 14159-45-6P 39153-56-5P 66003-76-7P 66003-78-9P 67695-82-3P  
 138529-81-4P 144089-15-6P 153698-46-5P 177786-98-0P  
 206861-54-3P 241806-75-7P 258341-95-6P 258341-99-0P  
 279218-73-4P 279218-74-5P 279218-75-6P 301525-08-6P  
 312386-77-9P 324771-13-3P **350251-56-8P** 350251-57-9P  
 363616-18-6P

(acid generator; alk.-developing silyl-contg. polymer pos.  
 photoresists having storage stability)

L46 ANSWER 11 OF 15 ZCAPLUS COPYRIGHT 2003 ACS  
 2001:635654 Document No. 135:218725 Positive-working far-UV  
 photoresist composition containing sulfonium salts as photoacid  
 generators. Sato, Kenichiro; Mizutani, Kazuyoshi (Fuji Photo Film  
 Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001235869 A2  
 20010831, 35 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
 2000-47971 20000224.

GI



AB The compns., which are storage stable and show high sensitivity and resoln. in formation of contact hole pattern in semiconductor device fabrication, contain (A) S+R<sub>1</sub>R<sub>2</sub>R<sub>3</sub> Z- [R<sub>1</sub>-R<sub>3</sub> = (un)substituted alkyl, (un)substituted aryl; 2 of R<sub>1</sub>-R<sub>3</sub> may bonded together to via direct bond or substituent; Z- = counter anion] which generate acids by irradiation with actinic ray or radiation and (B) a resin which is decomposed with acids to become alkali-sol. and contains .gtoreq.1 repeating unit selected from I [R<sub>c1</sub>-R<sub>c4</sub> = H, (un)substituted alkyl, (un)substituted cyclic hydrocarbyl, halo, cyano, CO<sub>2</sub>H, COYAR<sub>c9</sub>, COYACO<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>SiR'R''R''', CO<sub>2</sub>R<sub>c11</sub>, CO<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>SiR'R''R'''; R', R'', R''' = alkyl, trialkylsilyl, trialkylsilyloxy; Y = O, S, NH, NHSO<sub>2</sub>, NHSO<sub>2</sub>NH; R<sub>c9</sub> = CO<sub>2</sub>H, CO<sub>2</sub>R<sub>c10</sub> (R<sub>c10</sub> = any group given for R<sub>c11</sub>, Q, Q<sup>1</sup>), cyano, OH, (un)substituted alkoxy, CONHR<sub>c11</sub>, CONHSO<sub>2</sub>R<sub>c11</sub>, Q, Q<sup>1</sup>; R<sub>c11</sub> = (un)substituted alkyl, (un)substituted cycloalkyl; A = direct bond, (un)substituted alkylene, ether, thioether, CO, ester, amido, etc.; R<sub>29</sub>-R<sub>36</sub> = H, (un)substituted alkyl; a, b = 1, 2; .gtoreq.1 of R<sub>c1</sub>-R<sub>c4</sub> = .gtoreq.1 of R<sub>c1</sub>-R<sub>c4</sub> = COYACO<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>SiR'R''R''' or CO<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>SiR'R''R'''] and II (R<sub>c5</sub>-R<sub>c8</sub> = any group given for R<sub>c1</sub>-R<sub>c4</sub>).

IT 350251-56-8

(pos.-working far-UV photoresist compn. contg. sulfonium salts as photoacid generators and silylethoxycarbonyl-contg. resins)

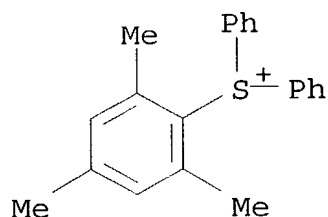
RN 350251-56-8 ZCAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6

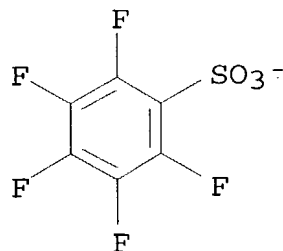
CMF C21 H21 S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



IC ICM G03F007-039

ICS C08G061-08; C08K005-42; C08L065-00; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

IT 66003-78-9 144089-15-6 153698-46-5 206861-54-3 241806-75-7  
 258341-99-0 260061-58-3 279218-75-6 301525-08-6  
 350251-56-8 350251-57-9 357444-19-0 357444-20-3

(pos.-working far-UV photoresist compn. contg. sulfonium salts as photoacid generators and silylethoxycarbonyl-contg. resins)

L46 ANSWER 12 OF 15 ZCAPLUS COPYRIGHT 2003 ACS

2001:579373 Document No. 135:172985 Positive-working photoresist composition for manufacturing electric circuits such as contact hole pattern formation. Sato, Kenichiro; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001215705 A2 20010810, 35 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-28103 20000204.

AB The title compn. contains a photoacid generator (Rs1)(Rs2)(Rs3)S+ Z- (Rs1-3 = alkyl, aryl; Z- = counter anion) and an acid-sensitive polysiloxane, wherein the polysiloxane has repeating unit [-Si{-L1-M1-CO2-(CH2)2-Si(R')(R'')(R''')}O3/2-] (L1 = alkylene, arylene contg. carboxylate, amide, or S; M1 = single bond, alkylene, arylene, etc.; R'-''' = alkyl, halo, alkoxy, trialkylsilyl, etc.). The compn., which contains the aforementioned photoacid generator

and the aforementioned acid-sensitive resin, generates little particles in the resist forming soln.

IT 350251-56-8  
(photoacid-sensitive compd. in pos.-working photoresist compn.)

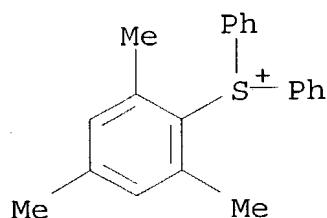
RN 350251-56-8 ZCAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6

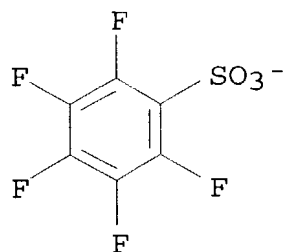
CMF C21 H21 S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



IC ICM G03F007-039

ICS C08L083-04; G03F007-004; G03F007-075; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76

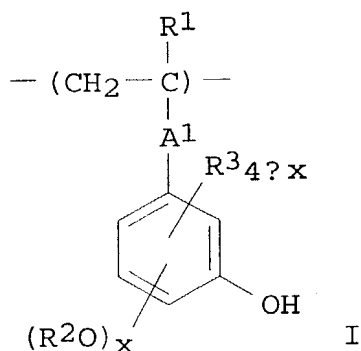
IT 14159-45-6 66003-78-9 138529-81-4 177786-98-0 206861-54-3  
241806-75-7 258341-95-6 258341-99-0 260061-58-3 279218-75-6  
301525-08-6 312386-77-9 324771-13-3 328006-70-8 335385-79-0  
341990-03-2 350251-56-8

(photoacid-sensitive compd. in pos.-working photoresist compn.)

L46 ANSWER 13 OF 15 ZCAPLUS COPYRIGHT 2003 ACS

2001:524737 Document No. 135:114443 Negative-working resist composition. Uenishi, Kazuya; Adegawa, Yutaka; Shirakawa, Koji (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1117002 A1 20010718, 87 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2001-100188 20010117. PRIORITY: JP 2000-8229 20000117; JP 2000-151477 20000523; JP 2000-235949 20000803.

GI



AB The invention relates to a neg.-working compn. useful in ultramicro-lithog. or other photofabrication for prodn. of VLSI or high-capacity microchips and to a neg.-working photoresists that can provide micropatterns using X-ray or electron beam, and that can be used in miniaturization processing of semiconductor devices using electron beams. The chem. amplification system neg.-working resist compn. for an electron beam and/or an x-ray, has excellent in sensitivity and resolu. and has a rectangular profile, comprising an alkali-sol. resin having structural units represented by (I), a compd. generating an acid by irradiation of the electron beam or the x-ray, and a crosslinking agent which initiates crosslinking by the acid.

IT 349619-84-7P

(photoacid generator; acid generating agent in neg.-working photoresist compn. for X-ray or electron beam lithog.)

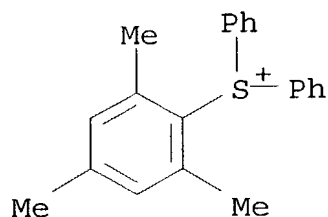
RN 349619-84-7 ZCAPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with 2-nitro-4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6

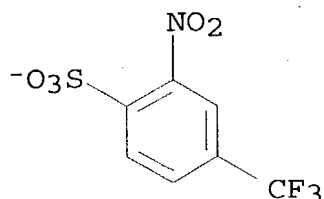
CMF C21 H21 S



CM 2

CRN 46806-65-9

CMF C7 H3 F3 N O5 S



IC ICM G03F007-004

ICS G03F007-038

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 36, 76

IT 220122-68-9P 270563-92-3P 270563-93-4P 270563-96-7P  
270563-98-9P 349619-84-7P 349619-88-1P 349619-92-7P  
349619-96-1P

(photoacid generator; acid generating agent in neg.-working photoresist compn. for X-ray or electron beam lithog.)

L46 ANSWER 14 OF 15 ZCAPLUS COPYRIGHT 2003 ACS

2001:521143 Document No. 135:114437 Positive-working photoresist composition for production of electric parts such as semiconductor substrate with contact holes. Sato, Kenichiro; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001194789 A2 20010719, 43 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-1896 20000107.

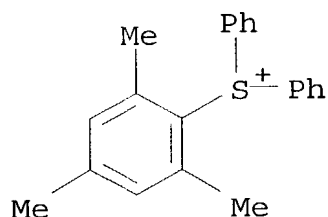
AB The title compn. contains: photoacid generator (Rs1)(Rs2)(Rs3)S+ Z- (Rs1-s3 = alkyl, aryl; Z- = counter anion); an acid-sensitive resin which increases soly. towards an alkali by reacting with an acid; and a solvent, wherein the acid-sensitive resin has repeating unit [-CH2-C(Y){-L-CO2-(CH2)2-Si(R')(R'')(R''')}]-] (Y = H, Me, cyano, etc.; L = single bond, 2-valent connecting group; R', R'', R''' = alkyl, Ph, trialkylsilyl, trialkylsilyloxy) and one of repeating unit chosen from [-CH2-C(Y){CO2-M1-Q}-] (Y = H, Me, cyano, etc.; M1

= single bond, alkylene, arylene, ester, etc.; Q = alkyl, allyl, alkyl alkylcarbonyl, ester) and  $[-CH_2-C(Y)\{CO_2-M_2-W\}-]$  (Y = H, Me, cyano, etc.; M<sub>2</sub> = single bond, alkylene, arylene, ester, etc.; W = lactone ring). The compn., which contains the acid-sensitive resin, provides the resist of the high sensitivity and the high resolu. and is suitable for use in fabrication of contact holes.

IT **350251-56-8P**  
 (photoacid generator in pos.-working photoresist compn.)  
 RN 350251-56-8 ZCAPLUS  
 CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with  
 pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

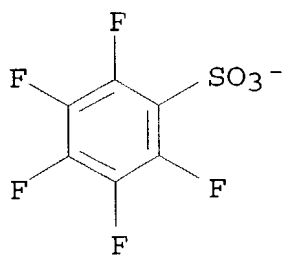
CM 1

CRN 47191-44-6  
 CMF C21 H21 S



CM 2

CRN 46377-88-2  
 CMF C6 F5 O3 S



IC ICM G03F007-039  
 ICS C08K005-36; C08L033-00; G03F007-004; G03F007-027; G03F007-029;  
 G03F007-075; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 IT 66003-78-9P 144089-15-6P 153698-46-5P 206861-54-3P  
 241806-75-7P 258341-99-0P 260061-58-3P 279218-75-6P  
 335385-79-0P 338445-30-0P **350251-56-8P** 350251-57-9P



(photoacid generator in pos.-working photoresist compn.)

L46 ANSWER 15 OF 15 ZCAPLUS COPYRIGHT 2003 ACS

2000:115245 Document No. 132:173394 Positive-working photoresist composition for far ultraviolet ray exposure. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000047387 A2 20000218, 41 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-212878 19980728.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The title photoresist compn. contains (1) a compd. I or II [R1-5 = H, (substituted) alkyl, (substituted) cycloalkyl, (substituted) alkoxy, (substituted) alkoxy carbonyl, (substituted) acyl, (substituted) acyloxy, NO<sub>2</sub>, halo, OH, CO<sub>2</sub>H, .gtoreq.1 of R1 and R2 is alkyl which may have C.gtoreq.5 substituents, (substituted) cycloalkyl, (substituted) alkoxy, (substituted) alkoxy carbonyl, (substituted) acyl or (substituted) acyloxy; a, b, l = 1-5; m, n = 0-5; X = RSO<sub>3</sub>; R = (substituted) aliph. hydrocarbyl, (substituted) arom. hydrocarbyl], which generates a sulfonic acid upon activating ray or radiation irradiation and (2) a resin having a repeating unit III [Rc1-c8 = H, (substituted) alkyl, (substituted) cyclic hydrocarbon, halo, CN, acid-cleavable group, COYARc9, CO<sub>2</sub>Rc11; p/q = 1/9-9/1, p + q = 10-100; Y = O, S, NH, NHSO<sub>2</sub>, NHSO<sub>2</sub>NH; Rc9 = CO<sub>2</sub>H, CO<sub>2</sub>Rc10 (Rc10 is the same as defined for Rc11 and the lactone structure shown below), CN, OH, (substituted) alkoxy, CONHRc11, CONHSO<sub>2</sub>Rc11, IV, V [R29-36 = H, (substituted) alkyl; a, b = 1 or 2]; Rc11 = (substituted) alkyl, (substituted) cyclic alkyl; A = single bond, (substituted) alkylene, ether, thioether, carbonyl, ester, amide, sulfonamide, urethane, urea, group composed of .gtoreq.2 of these groups], which is cleaved by the action of acid to. The compn. shows high sensitivity upon exposure at .ltoreq.250 nm, esp. at .ltoreq.220 nm and shows good storage stability in a soln. of the compn. in org. solvents.

IT 258342-04-0P

(pos. photoresist compn. contg. sulfonic acid generating compd. and alkali-sol. alicyclic polymer)

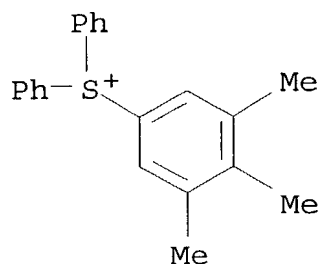
RN 258342-04-0 ZCAPLUS

CN Sulfonium, diphenyl(3,4,5-trimethylphenyl)-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 258342-03-9

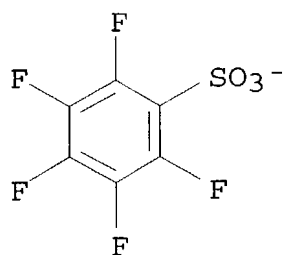
CMF C21 H21 S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



IC ICM G03F007-039

ICS C08F002-50; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 38

IT 56-40-6DP, Glycine, reaction products with cyclopentadiene-  
norbornenedicarboxylic anhydride copolymer, preparation 75-65-0DP,  
tert-Butyl alcohol, reaction products with cyclopentadiene-  
norbornenedicarboxylic anhydride copolymer 258341-95-6P  
258341-96-7P 258341-97-8P 258341-98-9P 258341-99-0P  
258342-00-6P 258342-02-8P **258342-04-0P** 258342-08-4DP,  
reaction products with glycine and Bu alc.  
(pos. photoresist compn. contg. sulfonic acid generating compd.  
and alkali-sol. alicyclic polymer)

=&gt; d 145 1-21 cbib abs hitstr hitind

L45 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2003 ACS

1999:698181 Document No. 131:315843 Carboxy- and hydroxy-pendent  
silicone compound, **photoresist** containing it, and its  
patterning. Nakajima, Mutsuo; Kaneko, Ichiro; Ishihara, Toshinobu;  
Tsuchiya, Junji; Hatakeyama, Jun; Nagura, Shigehiro (Shin-Etsu  
Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP

11302382 A2 19991102 Heisei, 95 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-227633 19980728. PRIORITY: JP 1997-224389 19970806; JP 1998-52760 19980218.

AB The silicone compd. with wt.-av. mol. wt. 10000-50,000 has repeating units of  $[\text{SiO}_3/2[\text{Z}(\text{CO}_2\text{H})_x]]_p$ ,  $[\text{SiO}_3/2[\text{Z}(\text{CO}_2\text{R}_1)_y]]_q$ ,  $(\text{R}_2\text{SiO}_3/2)_r$ , and  $[\text{SiO}_3/2\text{Z}'(\text{OH})_x]_s$  ( $\text{Z}$ ,  $\text{Z}'$  = 2-6-valent nonorg., polycyclic, or bridged cyclic compd. groups;  $\text{R}_1$  =  $\text{OCH}(\text{R})\text{R}'\text{OH}$ ,  $\text{NHCH}(\text{R})\text{R}'\text{OH}$ ), in which a part or whole of  $\text{CO}_2\text{H}$  or  $\text{OH}$  in the compd. is substituted with 1 or .gtoreq.2 acid-instable groups. The **resist** compn. contains a solvent, the above silicone, an **acid generator**, and optionally an acid-crosslinkable compd. The patterning of the **resist** compn. is carried out by applying the above compn. on a substrate, heating it, exposing with a high-energy beam or an electron beam via a photomask, and developing with a developer optionally after heating it. The **resist** shows high sensitivity and gives high-resoln. images with good heat resistance.

IT 161453-44-7 180801-55-2

(**acid generator**; carboxy- and hydroxy-pendent silsesquioxane-contg. **photoresist** and its patterning)

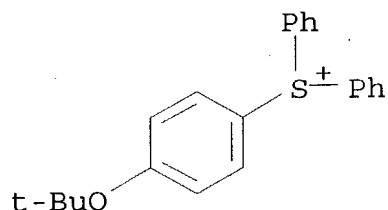
RN 161453-44-7 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 157089-25-3

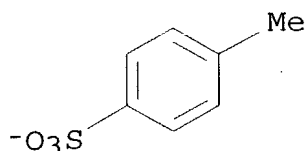
CMF C22 H23 O S



CM 2

CRN 16722-51-3

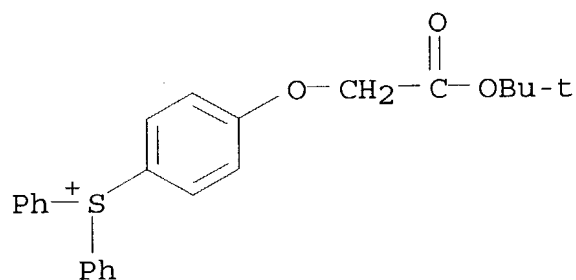
CMF C7 H7 O3 S



RN 180801-55-2 HCAPLUS  
 CN Sulfonium, [4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]diphenyl-,  
 salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

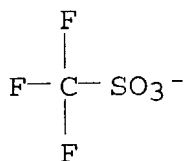
CM 1

CRN 180801-54-1  
 CMF C24 H25 O3 S



CM 2

CRN 37181-39-8  
 CMF C F3 O3 S

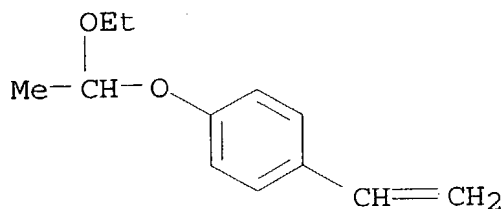


IT 158593-28-3  
 (carboxy- and hydroxy-pendent silsesquioxane-contg.  
**photoresist** and its patterning)

RN 158593-28-3 HCAPLUS  
 CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene  
 (9CI) (CA INDEX NAME)

CM 1

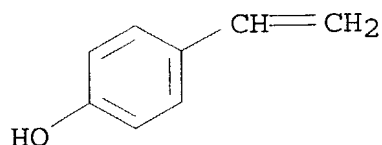
CRN 157057-20-0  
 CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



- IC ICM C08G077-04  
ICS G03F007-039; G03F007-075; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38
- ST silicone carboxy hydroxy pendent **resist**
- IT **Photoresists**  
(carboxy- and hydroxy-pendent silsesquioxane-contg. **photoresist** and its patterning)
- IT Silsesquioxanes  
(carboxy- and hydroxy-pendent silsesquioxane-contg. **photoresist** and its patterning)
- IT 14159-45-6 34684-40-7 71682-26-3 138529-81-4 138529-84-7  
141573-11-7 **161453-44-7 180801-55-2**  
(**acid generator**; carboxy- and hydroxy-pendent silsesquioxane-contg. **photoresist** and its patterning)
- IT 91-22-5, Quinoline, uses 102-71-6, uses 102-82-9 126-00-1  
872-50-4, N-Methylpyrrolidone, uses 4356-60-9 17464-88-9  
152266-34-7 **158593-28-3** 218770-96-8 220208-51-5,  
Piperidineethanol 221901-64-0 247187-40-2  
(carboxy- and hydroxy-pendent silsesquioxane-contg. **photoresist** and its patterning)
- IT 6850-65-3DP, 4-Amino-1-cyclohexanol, reaction products with silsesquioxanes 247187-20-8DP, Methyl 3-trichlorosilyl-1-cyclohexylcarboxylate hydrolytic homopolymer, sru, 1-ethoxyethyl ester, reaction products with aminoethanol 247187-23-1DP, reaction products with aminocyclohexanol 247187-25-3DP, reaction products with aminomethylcyclohexanol 247187-27-5DP, reaction products with

aminoethoxyethanol 247187-29-7DP, Methyl 3-trichlorosilyl-1-cyclohexylcarboxylate hydrolytic homopolymer, sru, ethoxyethyl and hydroxyethyl esters 247187-31-1DP, ethoxyethyl and hydroxyethyl esters 247187-35-5P, 8-Acetoxy-4-trichlorosilyl-1-cyclohexylcarboxylate hydrolytic copolymer 247249-69-0DP, Methyl 3-trichlorosilyl-1-cyclohexylcarboxylate hydrolytic homopolymer 1-ethoxyethyl ester, reaction products with aminoethanol 247249-71-4DP, 1,4-Butanediol divinyl ether-methyl 3-trichlorosilyl-1-cyclohexylcarboxylate hydrolytic copolymer 1-ethoxypropyl ester, reaction products with aminomethylpropanediol 247249-73-6DP, Methyl 3-trichlorosilyl-1-cyclohexylcarboxylate-cyclohexyltrichlorosilane hydrolytic copolymer 1-ethoxypropyl ester, reaction products with aminoethanol 247249-75-8DP, reaction products with aminocyclohexanol 247249-77-0DP, reaction products with aminoethanol 247249-79-2DP, reaction products with aminoethanol 247249-82-7DP, reaction products with aminoethanol 247249-84-9DP, reaction products with aminocyclohexanol 247249-86-1DP, reaction products with aminoethanol 247249-88-3DP, reaction products with aminocyclohexanol 247249-89-4DP, reaction products with aminomethylcyclohexanol 247249-90-7DP, reaction products with aminopropanediol 247249-91-8DP, reaction products with aminoethoxyethanol 247249-93-0P, Methyl 3-trichlorosilyl-1-cyclohexylcarboxylate hydrolytic homopolymer 1-ethoxyethyl and hydroxyethyl ester 247249-94-1P 247249-95-2DP, 8-Acetoxy-4-trichlorosilyl-1-cyclohexylcarboxylate hydrolytic copolymer 1-ethoxyethyl ester, reaction products with aminoethanol 247249-95-2P, 8-Acetoxy-4-trichlorosilyl-1-cyclohexylcarboxylate hydrolytic copolymer 1-ethoxyethyl ester 247249-97-4DP, 8-Acetoxy-4-trichlorosilyl-1-cyclohexylcarboxylate hydrolytic copolymer 1-ethoxyethyl ester, reaction products with aminomethylpropanediol 247249-99-6P 247250-01-7DP, reaction products with aminocyclohexanol 247250-04-0DP, reaction products with aminocyclohexanol 247250-07-3P 247250-11-9P 247250-15-3P 247250-16-4P 247250-17-5P 247250-18-6P, 8-Acetoxy-4-trichlorosilyl-1-cyclohexylcarboxylate hydrolytic copolymer tert-butyl ester (carboxy- and hydroxy-pendent silsesquioxane-contg.

**photoresist and its patterning)**

IT 107-59-5, tert-Butyl chloroacetate 109-92-2 115-69-5D, 2-Amino-2-methyl-1,3-propanediol, reaction products with carboxy-pendent silsesquioxanes 141-43-5D, Ethanolamine, reaction products with carboxy-pendent silsesquioxanes 540-51-2, 2-Bromoethanol 616-30-8D, 3-Amino-1,2-propanediol, reaction products with carboxy-pendent silsesquioxanes 928-55-2, Ethyl 1-propenyl ether 929-06-6D, 2-(2-Aminoethoxy)ethanol, reaction products with carboxy-pendent silsesquioxanes 164646-07-5D, reaction products with carboxy-pendent silsesquioxanes (carboxy- and hydroxy-pendent silsesquioxane-contg.

## photoresist and its patterning)

L45 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2003 ACS

1999:673208 Document No. 131:305148 Pattern forming method involving chemically amplified **resist** composition. Shimomura, Koji; Kinoshita, Yoshiaki; Yamaguchi, Yuko; Funato, Satoru (Matsushita Electronics Corporation, Japan; Clariant (Japan) K.K.). PCT Int. Appl. WO 9953378 A1 **19991021**, 37 pp. DESIGNATED STATES: W: CN, KR, US; RW: DE, FR, GB, IT. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP1792 19990405. PRIORITY: JP 1998-95681 19980408.

AB A method of forming an etching pattern with high resolu. and high precision by preventing reaction products from being formed at the interface between an org. antireflection film and a photosensitive material film and by decreasing residuals of the etched film after etching. Formed on a semiconductor substrate are a film of an etching objective made of polysilicon, an org. antireflection film, and a photosensitive material film made of a chem. amplification **resist** material contg. (a) an onium salt compd. and (b) at least either a sulfone compd. or a sulfonate. The photosensitive material film is exposed to light through a mask and developed to form a patterned photosensitive material film. Thereafter, preferably the antireflection film is dry-etched with an SO<sub>2</sub>-O<sub>2</sub> mixt. gas, and the etched film is dry-etched to form a pattern of the etched film.

IT **158593-28-3P**, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer  
(pattern forming method involving chem. amplified **resist** compn.)

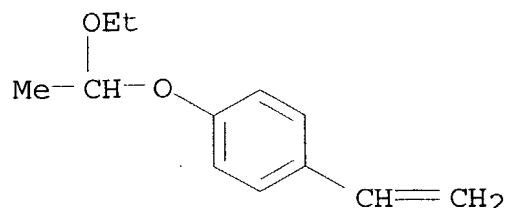
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

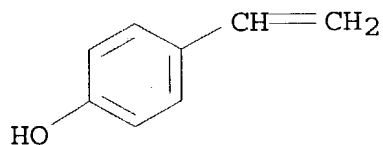
CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IT 19600-49-8, Triphenylsulfonium acetate 66003-78-9,  
Triphenylsulfonium triflate  
(pattern forming method involving chem. amplified **resist**  
compn.)

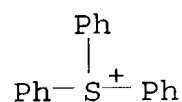
RN 19600-49-8 HCAPLUS

CN Sulfonium, triphenyl-, acetate (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 18393-55-0

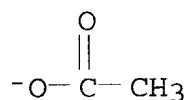
CMF C18 H15 S



CM 2

CRN 71-50-1

CMF C2 H3 O2



RN 66003-78-9 HCAPLUS

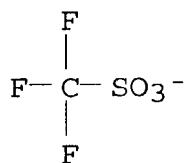
CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1)  
(9CI) (CA INDEX NAME)

CM 1

CRN 37181-39-8

CMF C F3 O3 S

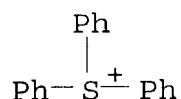




CM 2

CRN 18393-55-0

CMF C18 H15 S



- IC ICM G03F007-004  
ICS G03F007-11; G03F007-40
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76
- ST pattern forming method chem amplified **resist** compn  
**acid generator**
- IT **Photoresists**  
Semiconductor device fabrication  
(pattern forming method involving chem. amplified **resist** compn.)
- IT **158593-28-3P**, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer  
(pattern forming method involving chem. amplified **resist** compn.)
- IT 2394-00-5 10409-07-1 **19600-49-8**, Triphenylsulfonium acetate **66003-78-9**, Triphenylsulfonium triflate  
82386-41-2, Biscyclohexylsulfonylmethane 126615-05-2, Pyrogallol trimethanesulfonate 138529-81-4, Biscyclohexylsulfonyldiazomethane 247056-01-5  
(pattern forming method involving chem. amplified **resist** compn.)

L45 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2003 ACS  
1999:673206 Document No. 131:305147 Chemically amplified **resist** composition having more than one photochemically **acid-generating** compound. Kinoshita, Yoshiaki; Yamaguchi, Yuko; Funato, Satoru (Clariant (Japan) K. K., Japan). PCT Int. Appl. WO 9953377 A1 **19991021**, 36 pp. DESIGNATED STATES: W: CN, KR, US; RW: DE, FR, GB, IT. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP1791 19990405. PRIORITY: JP 1998-95680 19980408.

AB A chem. amplified **resist** compn. has a high sensitivity and exhibits high resoln., and is excellent in adaptivity for a variety of processes and excellent with respect to the stability of operation of a process using it, and can provide a good pattern shape, and is thus suitable as a micromachining material for use in manufg. an integrated circuit element. The chem. amplified **resist** compn. comprises: (a) an org. substance contg. a substituent capable of liberating upon being contacted with an acid; and (b) a compd. **generating** an **acid** upon exposure to a radiation (**acid-generating** agent) which comprises at least one onium salt and at least one of sulfone and sulfonate compds. The chem. amplified **resist** compn. may contain a basic compd.

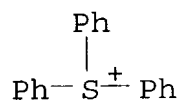
IT 19600-49-8, Triphenyl sulfonium acetate 66003-78-9  
 , Triphenyl sulfonium triflate 158593-28-3,  
 p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer  
 (chem. amplified **resist** compn. having more than one  
**photo-acid-generating** compd.)

RN 19600-49-8 HCAPLUS  
 CN Sulfonium, triphenyl-, acetate (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 18393-55-0

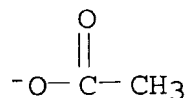
CMF C18 H15 S



CM 2

CRN 71-50-1

CMF C2 H3 O2

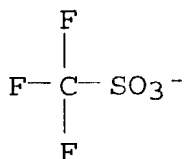


RN 66003-78-9 HCAPLUS  
 CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1)  
 (9CI) (CA INDEX NAME)

CM 1

CRN 37181-39-8

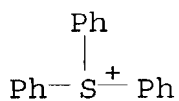
CMF C F3 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



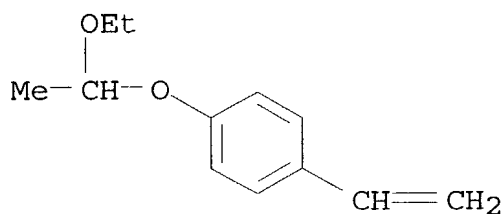
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

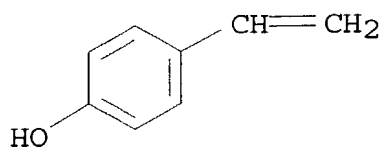
CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O

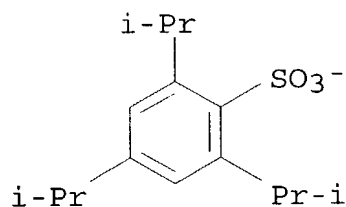


- IC ICM G03F007-004  
ICS G03F007-039
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76
- ST chem amplified **resist** compn **acid generator**
- IT **Photoresists**  
Semiconductor device fabrication  
(chem. amplified **resist** compn. having more than one **photo-acid-generating** compd.)
- IT 19600-49-8, Triphenyl sulfonium acetate 66003-78-9  
, Triphenyl sulfonium triflate 82386-41-2, Biscyclohexylsulfonyl methane 138529-81-4, Biscyclohexylsulfonyl diazomethane 142289-05-2, Pyrogallol tritriflate 158593-28-3,  
p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 247062-19-7  
(chem. amplified **resist** compn. having more than one **photo-acid-generating** compd.)
- L45 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2003 ACS  
1999:394790 Document No. 131:80784 Positive-working  
**photoresist** composition containing two kinds of **photoacid** generator. Uenishi, Kazuya; Kodama, Kunihiro; Aogo, Toshiaki; Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11167199 A2 19990622 Heisei, 57 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-333145 19971203.
- AB The title **photoresist** compn. contains a resin having a group that is decompd. in the action of acid to increase the soly. in alk. developing solns. and a mixt. of 2 types of **photoacid**-generators which are higher and lower in the effect of slowing down the dissoln. rate of the exposed portion. The compn. may contain the mixt. of the 2 **photoacid**-generators, a dissoln. inhibitor with mol. wt. .ltoreq.3000 which has an acid-decomposable group and of which the soly. in alk. developing solns. is increased by the action of acid, and a water-insol. and alkali-sol. resin. The compn. shows high photosensitivity and provides a high resoln. pattern with good profile, and the properties are independent of the elapse of time from exposure to baking.
- IT 197447-16-8P 205682-99-1P 228871-07-6P  
228871-08-7P 228871-10-1P 229016-19-7P  
(**photoresist** compn. contg. alkali sol. resin and two kinds of **photoacid** generator)

RN 197447-16-8 HCAPLUS  
CN Sulfonium, triphenyl-, salt with 2,4,6-tris(1-methylethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

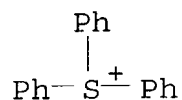
CM 1

CRN 46950-23-6  
CMF C15 H23 O3 S



CM 2

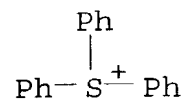
CRN 18393-55-0  
CMF C18 H15 S



RN 205682-99-1 HCAPLUS  
CN Sulfonium, triphenyl-, salt with dodecylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

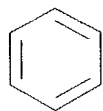
CM 1

CRN 18393-55-0  
CMF C18 H15 S



CM 2

CRN 1330-69-4  
CMF C18 H29 O3 S  
CCI IDS

D1-SO<sub>3</sub><sup>-</sup>Me-(CH<sub>2</sub>)<sub>11</sub>-D1

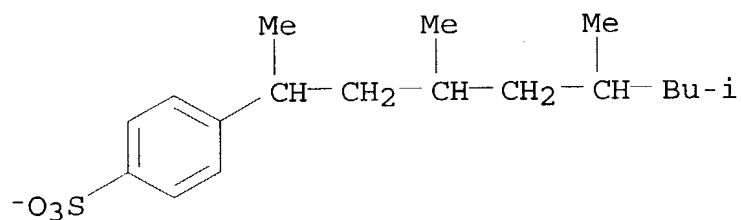
RN 228871-07-6 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
 4-(1,3,5,7-tetramethyloctyl)benzenesulfonic acid (1:2) (9CI) (CA  
 INDEX NAME)

CM 1

CRN 197447-08-8

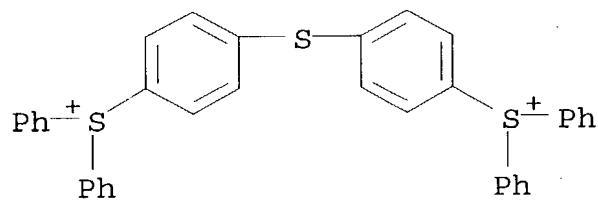
CMF C18 H29 O3 S



CM 2

CRN 74227-34-2

CMF C36 H28 S3

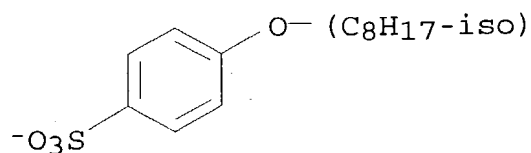


RN 228871-08-7 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
4-(isooctyloxy)benzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

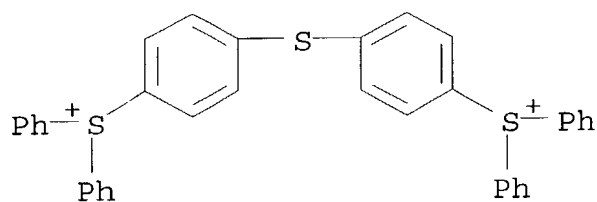
CM 1

CRN 197595-26-9  
CMF C14 H21 O4 S  
CCI IDS



CM 2

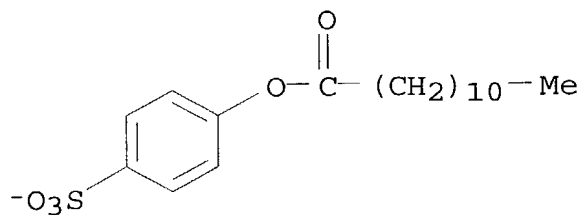
CRN 74227-34-2  
CMF C36 H28 S3



RN 228871-10-1 HCAPLUS  
CN Sulfonium, triphenyl-, salt with 4-sulfophenyl dodecanoate (1:1)  
(9CI) (CA INDEX NAME)

CM 1

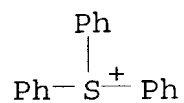
CRN 228871-09-8  
CMF C18 H27 O5 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



RN 229016-19-7 HCAPLUS

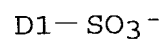
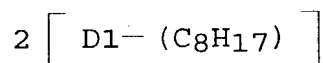
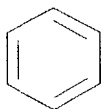
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with diisooctylbenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 229016-18-6

CMF C22 H37 O3 S

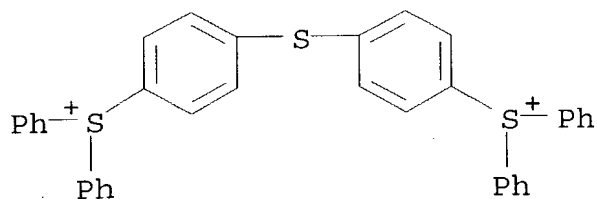
CCI IDS



CM 2

CRN 74227-34-2

CMF C36 H28 S3



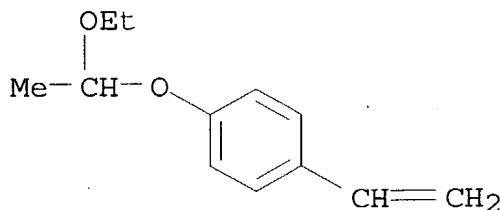


IT 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene  
copolymer 196709-91-8, p-(1-tert-Butoxyethoxy)styrene-p-  
hydroxystyrene copolymer 214208-08-9 214208-09-0  
214208-11-4 214208-12-5 214208-14-7  
229016-21-1  
(photoresist compn. contg. alkali sol. resin and two  
kinds of photoacid generator)

RN 158593-28-3 HCAPLUS  
CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene  
(9CI) (CA INDEX NAME)

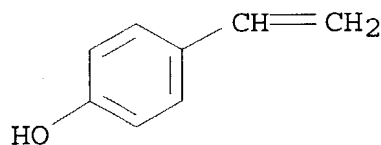
CM 1

CRN 157057-20-0  
CMF C12 H16 O2



CM 2

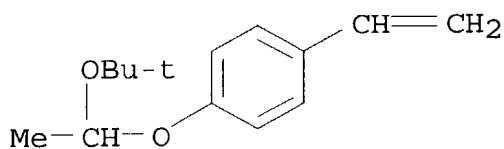
CRN 2628-17-3  
CMF C8 H8 O



RN 196709-91-8 HCAPLUS  
CN Phenol, 4-ethenyl-, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-  
ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

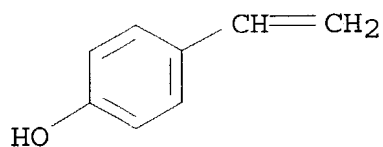
CRN 169811-45-4  
CMF C14 H20 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



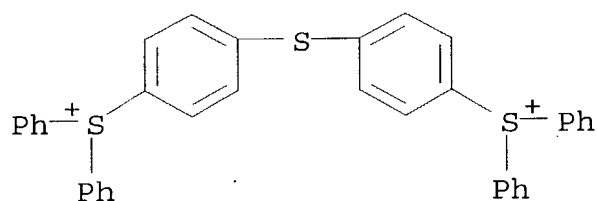
RN 214208-08-9 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with dodecylbenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2

CMF C36 H28 S3

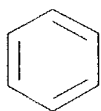


CM 2

CRN 1330-69-4

CMF C18 H29 O3 S

CCI IDS



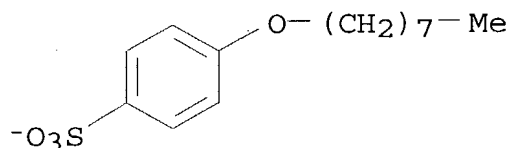
D1--SO<sub>3</sub><sup>-</sup>

Me- (CH<sub>2</sub>)<sub>11</sub>-D1

RN 214208-09-0 HCAPLUS  
 CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
 4-(octyloxy)benzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

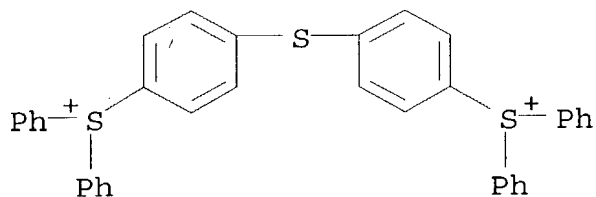
CM 1

CRN 214207-96-2  
 CMF C14 H21 O4 S



CM 2

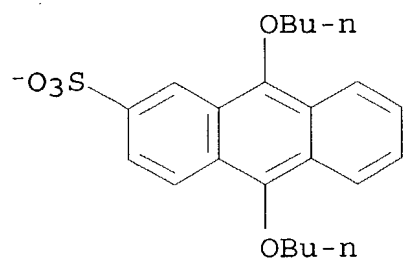
CRN 74227-34-2  
 CMF C36 H28 S3



RN 214208-11-4 HCAPLUS  
 CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
 9,10-dibutoxy-2-anthracenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

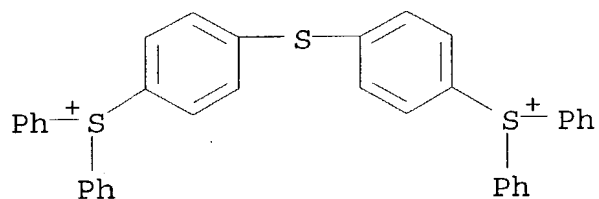
CM 1

CRN 152175-83-2  
CMF C22 H25 O5 S



CM 2

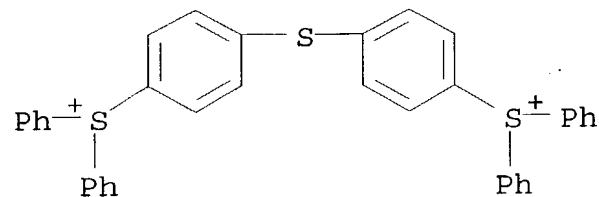
CRN 74227-34-2  
CMF C36 H28 S3



RN 214208-12-5 HCAPLUS  
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
2,4,6-tris(1-methylethyl)benzenesulfonic acid (1:2) (9CI) (CA INDEX  
NAME)

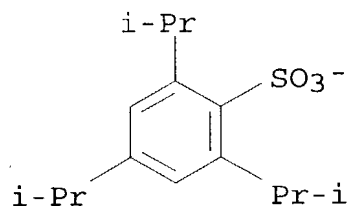
CM 1

CRN 74227-34-2  
CMF C36 H28 S3



CM 2

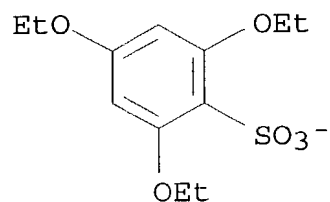
CRN 46950-23-6  
CMF C15 H23 O3 S



RN 214208-14-7 HCAPLUS  
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
2,4,6-triethoxybenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

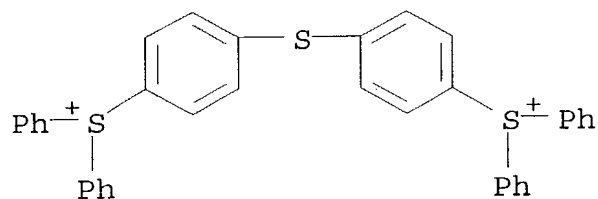
CM 1

CRN 214208-13-6  
CMF C12 H17 O6 S



CM 2

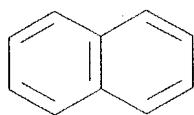
CRN 74227-34-2  
CMF C36 H28 S3



RN 229016-21-1 HCAPLUS  
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
bis(1,1-dimethylethyl)naphthalenesulfonic acid (1:2) (9CI) (CA  
INDEX NAME)

CM 1

CRN 229016-20-0  
 CMF C18 H23 O3 S  
 CCI IDS

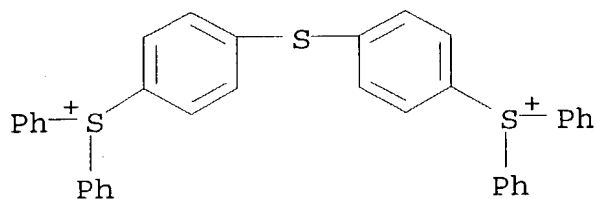


D1-SO<sub>3</sub><sup>-</sup>

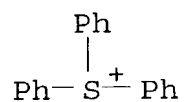
2 ( D1-Bu-t )

CM 2

CRN 74227-34-2  
 CMF C36 H28 S3

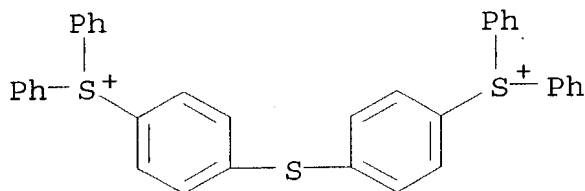


IT 4270-70-6, Triphenylsulfonium chloride 74815-63-7  
 (prepn. of **photoacid** generator)  
 RN 4270-70-6 HCAPLUS  
 CN Sulfonium, triphenyl-, chloride (8CI, 9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

RN 74815-63-7 HCAPLUS  
 CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, dichloride (9CI)  
 (CA INDEX NAME)



● 2 Cl<sup>-</sup>

IC ICM G03F007-004  
 ICS G03F007-00; G03F007-039; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 ST **photoresist** alkali soluble resin; **photoacid**  
 generator **photoresist**  
 IT Positive **photoresists**  
 (photoresist compn. contg. alkali sol. resin and two  
 kinds of **photoacid** generator)  
 IT 153698-65-8P 202396-81-4P  
 (dissoln. inhibitor; **photoresist** compn. contg. alkali  
 sol. resin and two kinds of **photoacid** generator)  
 IT 24979-74-6, p-Hydroxystyrene-styrene copolymer 153698-53-4  
 153698-63-6 153698-64-7 228871-11-2  
 (dissoln. inhibitor; **photoresist** compn. contg. alkali  
 sol. resin and two kinds of **photoacid** generator)  
 IT 56530-39-3P 197447-16-8P 205652-30-8P 205652-32-0P  
 205682-99-1P 220930-80-3P 228871-07-6P  
 228871-08-7P 228871-10-1P 229016-19-7P  
 (photoresist compn. contg. alkali sol. resin and two  
 kinds of **photoacid** generator)  
 IT 10409-07-1 125325-82-8, p-Hydroxystyrene-p-(2-  
 tetrahydropyranyloxy)styrene copolymer 142952-62-3,  
 tert-Butoxycarbonylmethyloxystyrene-p-hydroxystyrene copolymer  
 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene  
 copolymer 196709-91-8, p-(1-tert-Butoxyethoxy)styrene-p-  
 hydroxystyrene copolymer 205683-01-8 214208-08-9  
 214208-09-0 214208-11-4 214208-12-5  
 214208-14-7 229016-21-1  
 (photoresist compn. contg. alkali sol. resin and two  
 kinds of **photoacid** generator)  
 IT 98-59-9, p-Toluenesulfonyl chloride 98-68-0, p-  
 Methoxybenzenesulfonyl chloride 524-38-9, N-Hydroxyphthalimide  
 766-39-2, 2,3-Dimethylmaleic anhydride 773-64-8,

2-Mesitylenesulfonyl chloride 1483-72-3, Diphenyliodonium chloride  
4270-70-6, Triphenylsulfonium chloride 7803-49-8,  
Hydroxyamine, reactions 25155-30-0 53176-11-7,  
Triisopropylbenzenesulfonyl chloride 74815-63-7  
89740-13-6 197595-37-2 228871-12-3  
(prepn. of **photoacid** generator)

L45 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2003 ACS

1999:246939 Document No. 130:274098 **Photoresist** composition.  
Watanabe, Satoshi; Watanabe, Osamu; Furihata, Tomoyoshi; Takeda,  
Yoshifumi; Nagura, Shigehiro; Ishihara, Toshinobu; Yamaoka, Tsuguo  
(Shin-Etsu Chemical Co., Ltd., Japan). Eur. Pat. Appl. EP 908783 A1  
19990414, 82 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK,  
ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO.  
(English). CODEN: EPXXDW. APPLICATION: EP 1998-308175 19981008.  
PRIORITY: JP 1997-291681 19971008.

AB A **photoresist** compn. comprises (A) an org. solvent, (B) at  
least two polymers with wt.-av. mol. wts. of 1000-500,000, which  
have at least one type of acid labile groups and are crosslinked  
within a mol. and/or between mols. with crosslinking groups having  
C-O-C linkages, and (C) a **photoacid** generator. The  
**photoresist** compn. has excellent sensitivity and resoln. and  
provides **resist** patterns of outstanding thermal stability,  
reproducibility, and plasma etching resistance. Patterns obtained  
with the **photoresist** compn. are less prone to overhanging  
and have excellent dimensional controllability. The  
**photoresist** compn. is suitable as a micropatterning material  
for VLSI fabrication.

IT 157089-24-2 161453-44-7 180801-55-2  
186769-06-2 186769-08-4 195723-93-4  
221901-46-8

(**photoresist** compns. contg. crosslinked polymers having  
acid labile groups and)

RN 157089-24-2 HCAPLUS

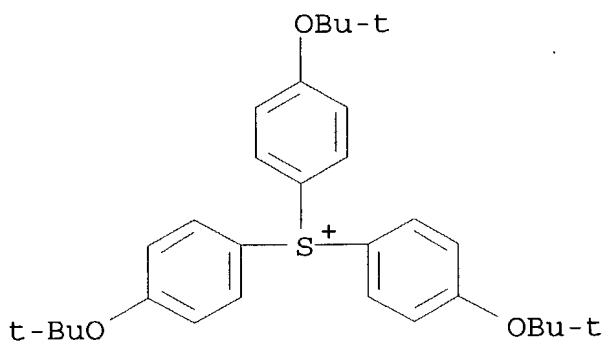
CN Sulfonium, tris[4-(1,1-dimethylethoxy)phenyl]-, salt with  
trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 137455-55-1

CMF C30 H39 O3 S

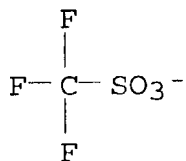




CM 2

CRN 37181-39-8

CMF C F3 O3 S



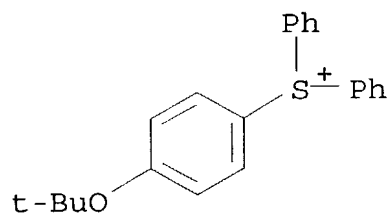
RN 161453-44-7 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 157089-25-3

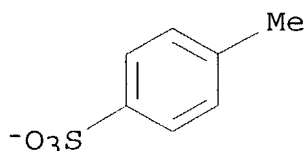
CMF C22 H23 O S



CM 2

CRN 16722-51-3

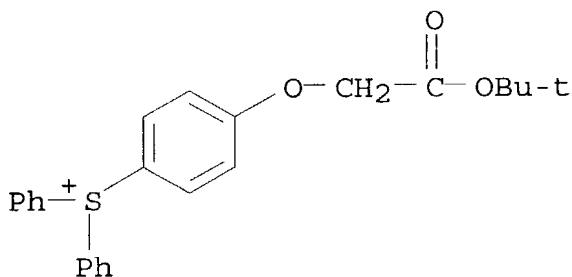
CMF C7 H7 O3 S



RN 180801-55-2 HCAPLUS  
 CN Sulfonium, [4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]diphenyl-,  
 salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

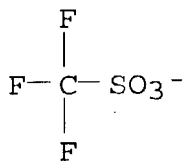
CM 1

CRN 180801-54-1  
 CMF C24 H25 O3 S



CM 2

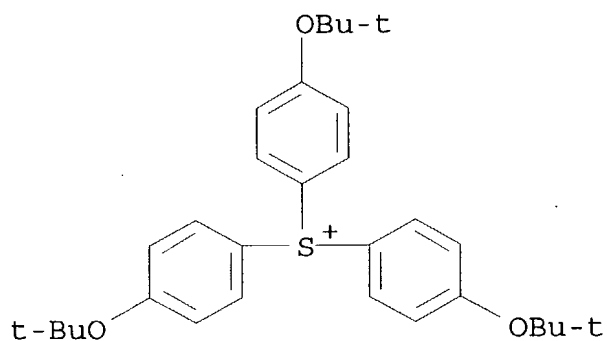
CRN 37181-39-8  
 CMF C F3 O3 S



RN 186769-06-2 HCAPLUS  
 CN Sulfonium, tris[4-(1,1-dimethylethoxy)phenyl]-, salt with  
 pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

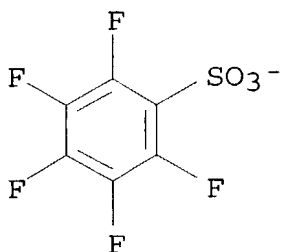
CRN 137455-55-1  
 CMF C30 H39 O3 S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



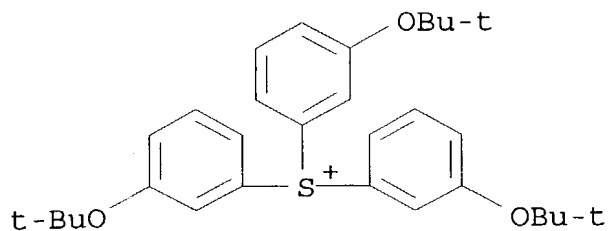
RN 186769-08-4 HCAPLUS

CN Sulfonium, tris[3-(1,1-dimethylethoxy)phenyl]-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 186769-07-3

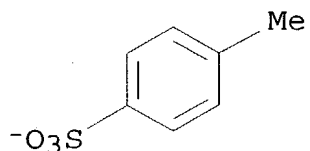
CMF C30 H39 O3 S



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



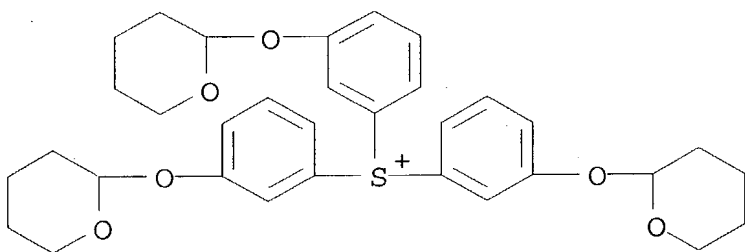
RN 195723-93-4 HCAPLUS

CN Sulfonium, tris[3-[(tetrahydro-2H-pyran-2-yl)oxy]phenyl]-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 195723-92-3

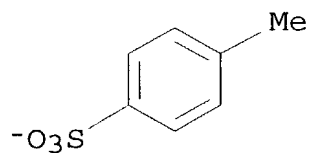
CMF C33 H39 O6 S



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



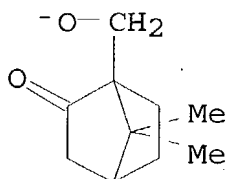
RN 221901-46-8 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with 1-(hydroxymethyl)-7,7-dimethylbicyclo[2.2.1]heptan-2-one (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 221901-45-7

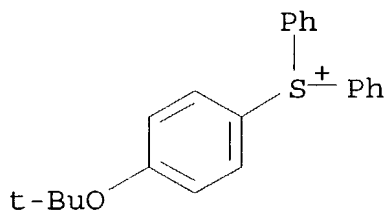
CMF C10 H15 O2



CM 2

CRN 157089-25-3

CMF C22 H23 O S



IT 158593-28-3

(photoresist compns. contg. crosslinked polymers having acid labile groups, photoacid generators and)

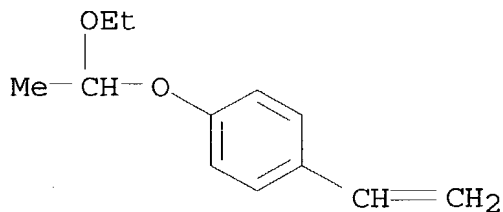
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

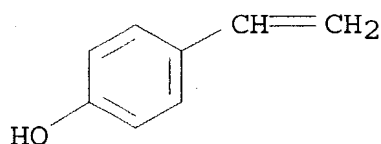
CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS C08F008-00

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **photoresist** compn polymer acid labile groupIT **Photoresists**(contg. crosslinked polymers having acid labile groups and **photoacid** generators)

IT 13094-35-4 14159-45-6 138529-81-4 141573-11-7

157089-24-2 161453-44-7 180801-55-2

186769-06-2 186769-08-4 195723-93-4

216870-63-2 221901-46-8

(photoresist compns. contg. crosslinked polymers having acid labile groups and)

IT 100-37-8, N,N-Diethylethanolamine 102-71-6, Triethanolamine, uses

102-82-9, Tributylamine 110-18-9 126-00-1 127-19-5,

N,N-Dimethylacetamide 139-87-7, N-Ethyldiethanolamine 142-08-5,

2(1H)-Pyridinone 872-50-4, N-Methylpyrrolidone, uses 1734-16-3

6674-22-2 18066-45-0 68510-93-0 72762-00-6, 2-Hydroxypyridine

117458-06-7 158593-28-3 211919-60-7 220208-51-5,

Piperidineethanol 221901-64-0

(photoresist compns. contg. crosslinked polymers having acid labile groups, **photoacid** generators and)

IT 129674-22-2 177034-75-2 218796-79-3 221900-20-5 221900-25-0

221900-30-7 221900-34-1 221900-38-5 221900-44-3 221900-50-1

221900-55-6 221900-62-5 221900-71-6 221900-76-1 221900-83-0

(photoresist compns. contg. **photoacid** generators and)

L45 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2003 ACS

1999:231806 Document No. 130:304048 Positively-working photosensitive colored composition and color filter using same. Suzuki, Nobuo (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11095435 A2 19990409 Heisei, 62 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-252177 19970917.

AB The title compn. contains (a) a resin insol. in water and sol. in aq. alk. solns., (b) a compd. **generating acid** under active ray or radiation irradiation, (c) a low-mol.-wt.

acid-decomposable dissoln.-inhibiting compd. with mol. wt.  $\geq 3000$  which has acid-decomposable groups whose soly. in alk. developing solns. is increased by the action of acid, and (d) a colorant. The compn. may contain (a) a resin having groups which are decompd. by the action of acid to increase the soly. in alk. developing solns., (b) a compd. **generating acid** under active ray or radiation irradi., (c) an org. basic compd., and (d) a colorant. A color filter using the compn. is also claimed. The compn. shows high photosensitivity and provides high quality patterns with good profile.

IT 66003-78-9

(acid generator; in pos. working  
photoresist material contg. alkali-sol. resin or  
acid-decomposable resin for manuf. of color filter)

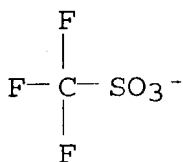
RN 66003-78-9 HCAPLUS

CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1)  
(9CI) (CA INDEX NAME)

CM 1

CRN 37181-39-8

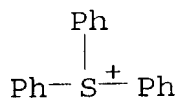
CMF C F3 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 196709-91-8

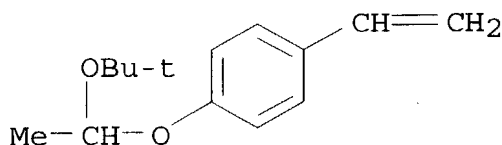
(pos. working photoresist material contg. alkali-sol.  
resin or acid-decomposable resin for manuf. of color filter)

RN 196709-91-8 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

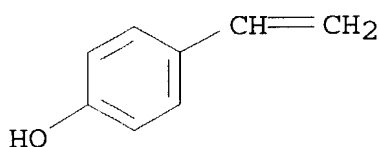
CM 1

CRN 169811-45-4  
CMF C14 H20 O2



CM 2

CRN 2628-17-3  
CMF C8 H8 O



IC ICM G03F007-039  
ICS C08L101-00; C09D201-00; G02B005-20; G03F007-004  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
ST pos working photosensitive compn color filter; acid decompn inhibitor  
pos working **photoresist**; alkali soly acid decomposable  
compn  
IT Optical filters  
Positive **photoresists**  
(pos. working **photoresist** material contg. alkali-sol.  
resin or acid-decomposable resin for manuf. of color filter)  
IT 153698-54-5 153698-63-6 186493-32-3  
(acid decompn. inhibitor; in pos. working **photoresist**  
material contg. alkali-sol. resin or acid-decomposable resin for  
manuf. of color filter)  
IT 56530-39-3 66003-78-9 124737-97-9  
(**acid generator**; in pos. working  
**photoresist** material contg. alkali-sol. resin or  
acid-decomposable resin for manuf. of color filter)  
IT 101-80-4 484-47-9 1122-58-3  
(in pos. working **photoresist** material contg.  
alkali-sol. resin or acid-decomposable resin for manuf. of color  
filter)  
IT 24979-74-6, p-Hydroxystyrene-styrene copolymer 142952-62-3  
180337-31-9 196709-91-8 223473-73-2  
(pos. working **photoresist** material contg. alkali-sol.  
resin or acid-decomposable resin for manuf. of color filter)



L45 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2003 ACS  
 1999:223098 Document No. 130:244459 Novel process for preparing  
**photoresist** composition. Okazaki, Hiroshi; Pawlowski,  
 Georg; Funato, Satoru; Kinoshita, Yoshiaki; Yamaguchi, Yuko  
 (Clariant International Ltd., Switz.). PCT Int. Appl. WO 9915935 A1  
**19990401**, 55 pp. DESIGNATED STATES: W: CN, JP, KR, SG, US;  
 RW: BE, DE, FR, GB, IT. (Japanese). CODEN: PIXXD2. APPLICATION:  
 WO 1998-JP3788 19980826. PRIORITY: JP 1997-275185 19970922.

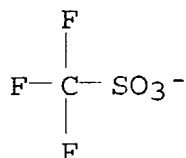
AB A **photoresist** compn. is prepd. by reacting an alkali-sol.  
 polymer having phenolic hydroxyl or carboxyl groups with a vinyl  
 ether compd. in an aprotic solvent, such as propylene glycol  
 monomethyl ether acetate, in the presence of an acid catalyst,  
 suspending the reaction by the addn. of a base, and adding a  
**photoacid** generator to the reacting soln. When a dialkyl  
 dicarbonate is used instead of the vinyl ether compd., a  
**photoresist** compn. is prepd. by carrying out the reaction in  
 the presence of a base catalyst and adding a **photoacid**  
 generator to the reacting soln. A **photoresist** compn. can  
 thus be prepd. without isolating or purifying an alkali-sol. polymer  
 which has been substituted by a catalytic reaction.

IT **66003-78-9**, Triphenylsulfonium trifluoromethanesulfonate  
 (**photoacid photogenerator** for  
**photoresists** contg. vinyl ether compd. reaction products  
 with alkali-sol. polymers having phenolic hydroxyl or carboxyl  
 groups)

RN **66003-78-9** HCAPLUS  
 CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1)  
 (9CI) (CA INDEX NAME)

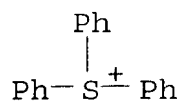
CM 1

CRN 37181-39-8  
 CMF C F3 O3 S



CM 2

CRN 18393-55-0  
 CMF C18 H15 S



IT 221214-45-5DP, crosslinked with triethylene glycol divinyl ether 221214-45-5P, p-[1-(2-Chloroethoxy)ethoxy]styrene-p-hydroxystyrene copolymer  
(prepn. and use in prepg. **photoresists**)

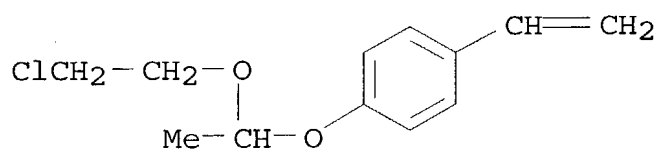
RN 221214-45-5 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-chloroethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 221214-44-4

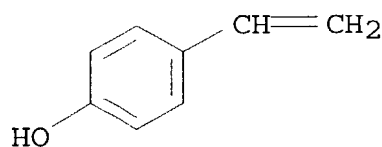
CMF C12 H15 Cl O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



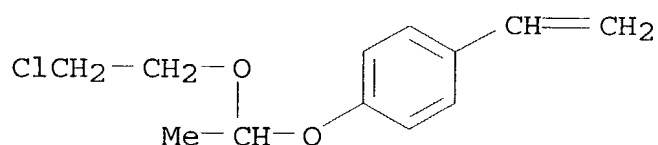
RN 221214-45-5 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-[1-(2-chloroethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 221214-44-4

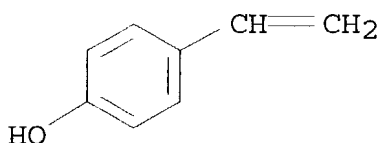
CMF C12 H15 Cl O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



- IC ICM G03F007-039  
ICS C08F212-14; C08L025-18; C09D125-18
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST **photoresist** phenolic resin reaction vinyl ether; dialkyl dicarbonate reaction phenolic resin **photoresist**
- IT **Photoresists**  
(contg. phenolic resin reaction products with dialkyl dicarbonates and vinyl ether compds. and **photoacid** generators)
- IT Phenolic resins, uses  
(reaction products with dialkyl dicarbonates and vinyl ether compds.; **photoresists** contg. **photoacid** generators and)
- IT 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate (**photoacid photogenerator** for **photoresists** contg. vinyl ether compd. reaction products with alkali-sol. polymers having phenolic hydroxyl or carboxyl groups)
- IT 109-92-2DP, Ethyl vinyl ether, reaction products with alkali-sol. polymers having phenolic hydroxyl or carboxyl groups 110-75-8DP, 2-Chloroethyl vinyl ether, reaction products with alkali-sol. polymers having phenolic hydroxyl or carboxyl groups 764-78-3DP, Ethylene glycol divinyl ether, reaction products with alkali-sol. polymers having phenolic hydroxyl or carboxyl groups 765-12-8DP, Triethylene glycol divinyl ether, reaction products with alkali-sol. polymers having phenolic hydroxyl or carboxyl groups 2182-55-0DP, Cyclohexyl vinyl ether, reaction products with alkali-sol. polymers having phenolic hydroxyl or carboxyl groups 129674-22-2P, p-(tert-Butoxycarbonyloxy)styrene-p-hydroxystyrene copolymer

159377-76-1P 177034-75-2DP, p-(tert-Butoxycarbonyloxy)styrene-p-(1-ethoxyethoxy)styrene-p-hydroxystyrene copolymer, crosslinked with triethylene glycol divinyl ether 177034-75-2P, p-(tert-Butoxycarbonyloxy)styrene-p-(1-ethoxyethoxy)styrene-p-hydroxystyrene copolymer **221214-45-5DP**, crosslinked with triethylene glycol divinyl ether **221214-45-5P**, p-[1-(2-Chloroethoxy)ethoxy]styrene-p-hydroxystyrene copolymer **221214-46-6P**, p-(Tetrahydropyranyl)styrene-p-[1-(2-Chloroethoxy)ethoxy]styrene-p-hydroxystyrene copolymer **221214-47-7P** **221214-48-8P**, [1-(2-Chloroethoxy)ethoxy]methacrylate-methacrylic acid-methyl methacrylate copolymer **221214-49-9P**, p-(tert-Butoxycarbonyloxy)styrene-p-(1-ethoxyethoxy)styrene-p-hydroxystyrene-styrene copolymer (prepn. and use in prepg. **photoresists**)

L45 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2003 ACS

1999:189048 Document No. 130:215862 Pattern formation method using chemical-enhanced positive-working **photoresist**. Hatakeyama, Jun; Takemura, Katsunari; Nakura, Shigehiro (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11072928 A2 **19990316** Heisei, 25 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-186952 19980617. PRIORITY: JP 1997-185813 19970626.

AB In pattern formation comprising (1) coating a pos.-working **photoresist**, (2) pre-baking if necessary and exposing the **photoresists**, (3) post-exposure baking, and developing with an aq. alkali developer, the post-exposure baking is performed at 70-140.degree. for 30-200 s on a hot plate at an environment of temp. 15-30.degree. and relative humidity .gtoreq.30%. The **resist** compn. contains (A) an org. solvent, (B) a base resin with .gtoreq.10 mol% H atom of phenolic OH replaced with -C(R1)(R2)OR3 (R1, R2 = H, C1-18 alkyl; R3 = C1-18 (halo-contg.) hydrocarbon; R1 with R2, R1 with R3, or R2 with R3 may form a ring), (C) an **acid-generator**, and (D) a basic compd. The invention can promote acetal releasing reaction for obtaining stable pattern.

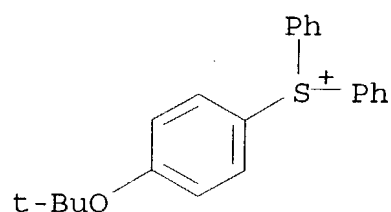
IT **157089-26-4 161453-44-7**  
(**acid-generator** contained in **photoresist** compn. for pattern formation contg. post-exposure baking at certain condition)

RN **157089-26-4** HCAPLUS  
CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 157089-25-3

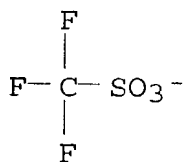
CMF C22 H23 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



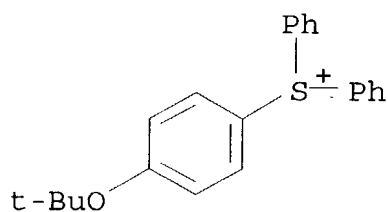
RN 161453-44-7 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 157089-25-3

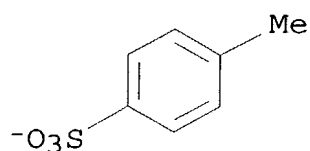
CMF C22 H23 O S



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



IT 158593-28-3

(contained in **photoresist** compn. for pattern formation  
contg. post-exposure baking at certain condition)

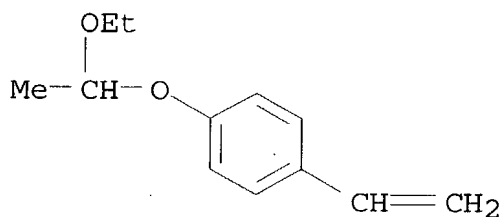
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

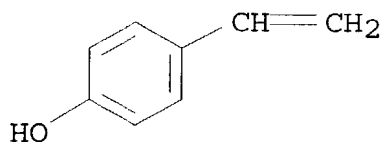
CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-38

ICS G03F007-004; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)

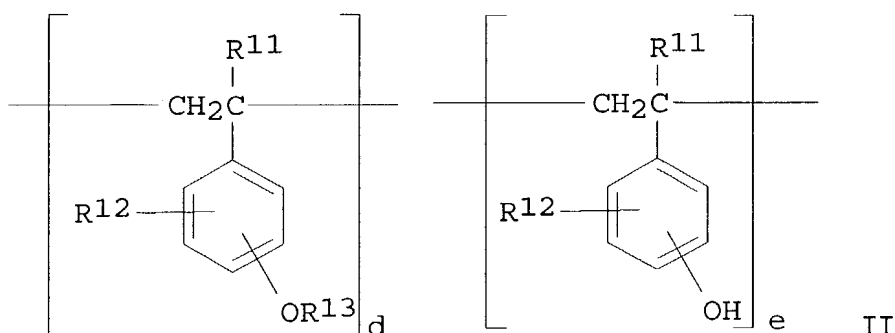
ST pattern formation post exposure baking **photoresist**IT **Photoresists**

(contg. specified resin for pattern formation contg.  
post-exposure baking at certain condition)

- IT 14159-45-6 157089-26-4 161453-44-7  
(acid-generator contained in  
**photoresist** compn. for pattern formation contg.  
post-exposure baking at certain condition)
- IT 102-71-6, Triethanol amine, uses 102-82-9, Tributyl amine  
70384-51-9, Tris{2-(2-methoxy ethoxy)ethyl}amine 211919-60-7  
218770-96-8  
(basic compd. contained in **photoresist** compn. for  
pattern formation contg. post-exposure baking at certain  
condition)
- IT 123589-22-0 125325-82-8 129674-22-2 158593-28-3  
177034-75-2 218770-98-0 220059-77-8  
(contained in **photoresist** compn. for pattern formation  
contg. post-exposure baking at certain condition)
- IT 97-64-3, Ethyl lactate 3852-09-3, Methyl 3-methoxypropionate  
84540-57-8, Propylene glycol monomethyl ether acetate  
(solvent contained in **photoresist** compn. for pattern  
formation contg. post-exposure baking at certain condition)
- IT 117458-06-7 166597-59-7  
(soly.-suppressing agent contained in **photoresist**  
compn. for pattern formation contg. post-exposure baking at  
certain condition)

L45 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2003 ACS  
1999:56807 Document No. 130:146230 Chemically amplified  
positive-working **photoresist** with good resolution in dry  
condition. Hatakeyama, Jun; Takemura, Katsuya; Nagura, Shigehiro  
(Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo  
Koho JP 11015163 A2 19990122 Heisei, 17 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1997-185812 19970626.

GI



AB The **photoresist** contains al alc. compd. with b.p. (at 760  
mmHg) .gtoreq.180.degree.. The other constituents for above may be  
an org. solvent, a base resin (Mw 5000-100,000) where .gtoreq.10  
mol% H of phenolic OH are replaced with an acid-unstable group  
CR1R2OR3 (I; R1, R2 = H, C1-10 alkyl; R3 = C1-10 hydrocarbyl), and

an **acid generator**. The base resin may be crosslinked via CR4R5(OR6)bOA[O(R6O)bCR4R5]a' and/or CR4R5OR6BA[BR6OCR4R5]a' [R4, R5 = H, C1-8 alkyl; R6 = C1-10 alkylene; b = 0-10; A = a-valent C1-50 satd. aliph., arom., alicyclic, or heterocyclic group; B = CO2, NHCO2, NHCONH; a = 2-8; a' = 1-7]. A macromol. of Mw 3000-300,000 comprising II [R11 = H, Me; R12 = C1-8 alkyl; R13 = an acid-unstable group other than I; d .gtoreq. 0; e > 0; d + e = 1; 0.5 .ltoreq. e/(d + e) .ltoreq. 1.0], or a dissoln. inhibitor having an acid-unstable group, may be incorporated in above **photoresist**.

IT 158593-28-3

(alkali-sol. resin; chem. amplified pos. **photoresist** contg. high-b.p. alcs. and showing good patterning ability in dry condition)

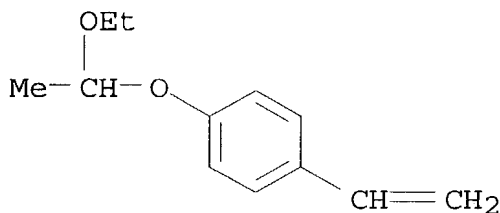
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

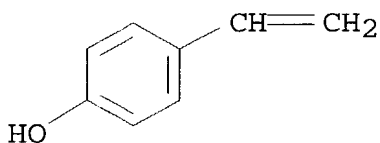
CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IT 157089-26-4 161453-44-7

(**photoacid** generator; chem. amplified pos. **photoresist** contg. high-b.p. alcs. and showing good patterning ability in dry condition)

RN 157089-26-4 HCAPLUS

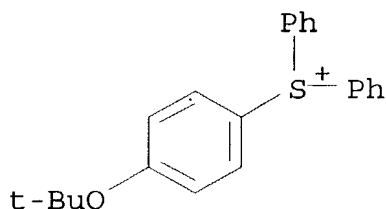


CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 157089-25-3

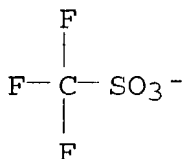
CMF C22 H23 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



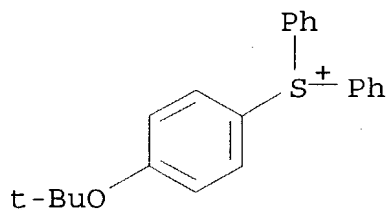
RN 161453-44-7 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 157089-25-3

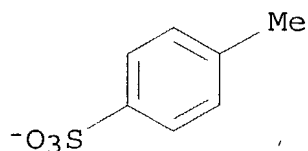
CMF C22 H23 O S



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



- IC ICM G03F007-039  
ICS G03F007-004; G03F007-023; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38
- ST **photoresist** chem amplified alc boiling point; pattern capability dry condition pos **photoresist**; polyalkylene glycol chem amplified **photoresist**; alkali sol polyhydroxystyrene **photoresist** pos
- IT Polyoxyalkylenes, uses  
(chem. amplified pos. **photoresist** contg. high-b.p. alcs. and showing good patterning ability in dry condition)
- IT Positive **photoresists**  
(chem.-amplified; chem. amplified pos. **photoresist** contg. high-b.p. alcs. and showing good patterning ability in dry condition)
- IT 123589-22-0 125325-82-8 129674-22-2 158593-28-3  
177034-75-2 218770-98-0 220059-77-8  
(alkali-sol. resin; chem. amplified pos. **photoresist** contg. high-b.p. alcs. and showing good patterning ability in dry condition)
- IT 56-81-5, 1,2,3-Propanetriol, uses 107-21-1, 1,2-Ethanediol, uses 112-30-1, Decyl alcohol 25322-68-3 25322-69-4, Polypropylene glycol  
(chem. amplified pos. **photoresist** contg. high-b.p. alcs. and showing good patterning ability in dry condition)
- IT 117458-06-7 166597-59-7  
(dissoln. inhibitor; chem. amplified pos. **photoresist** contg. high-b.p. alcs. and showing good patterning ability in dry condition)
- IT 157089-26-4 161453-44-7 220059-84-7  
(**photoacid** generator; chem. amplified pos. **photoresist** contg. high-b.p. alcs. and showing good patterning ability in dry condition)

L45 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2003 ACS  
1999:32053 Document No. 130:88177 **Photoresist** composition.  
Hatakeyama, Jun; Nishi, Tsunehiro; Nagata, Takeshi; Nagura, Shigehiro (Shin-Etsu Chemical Co., Ltd., Japan). Eur. Pat. Appl. EP

887705 A1 19981230, 36 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1998-305072 19980626. PRIORITY: JP 1997-185814 19970626.

AB A chem. amplified **photoresist** compn., suitable for microfabrication by photolithog., contains a resin base, an org. solvent, and a **photoacid** generator. In order to reduce problems of shape loss at the developed **resist** layer following baking, the compn. addnl. contains a basic compd. according to one of the following formula  

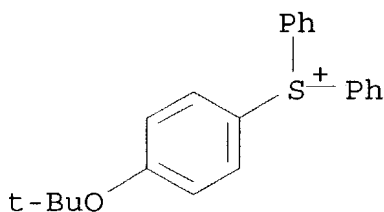
$$N[CH_2CH_2O(R_{10})kR_4][CH_2CH_2O(R_2O)mR_5]CH_2CH_2O(R_{30})nR_6 \text{ or } N[CH_2CH_2O(R_7O)kR_9][CH_2CH_2O(R_8O)mR_{10}]H$$
 wherein R1, R2, R3, R7, and R8 are independently normal, branched or cyclic alkylene groups having 1 to 20 carbon atoms, R4, R5, R6, R9, and R10 are independently hydrogen, alkyl groups having 1 to 20 carbon atoms or amino groups, R4 and R5, R5 and R6, R4 and R6, or R4, R5 and R6, and R9 and R10 taken together may form a ring, letters k, m and n are integers of 0 to 20, with the proviso that hydrogen is excluded from R4, R5, R6, R9 and R10 when k, m or n is equal to 0.

IT 157089-26-4 158593-28-3 161453-44-7  
 (chem. amplified **photoresists** contg. tertiary amines and)

RN 157089-26-4 HCAPLUS  
 CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

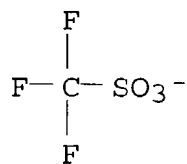
CM 1

CRN 157089-25-3  
 CMF C22 H23 O S



CM 2

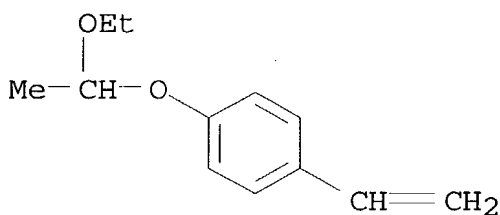
CRN 37181-39-8  
 CMF C F3 O3 S



RN 158593-28-3 HCAPLUS  
CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene  
(9CI) (CA INDEX NAME)

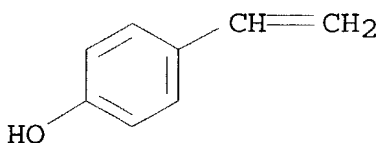
CM 1

CRN 157057-20-0  
CMF C12 H16 O2



CM 2

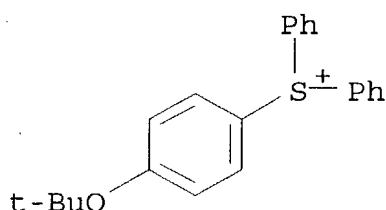
CRN 2628-17-3  
CMF C8 H8 O



RN 161453-44-7 HCAPLUS  
CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with  
4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

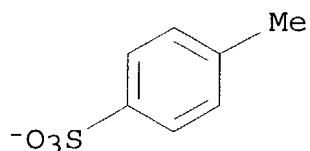
CM 1

CRN 157089-25-3  
CMF C22 H23 O S



CM 2

CRN 16722-51-3  
CMF C7 H7 O3 S

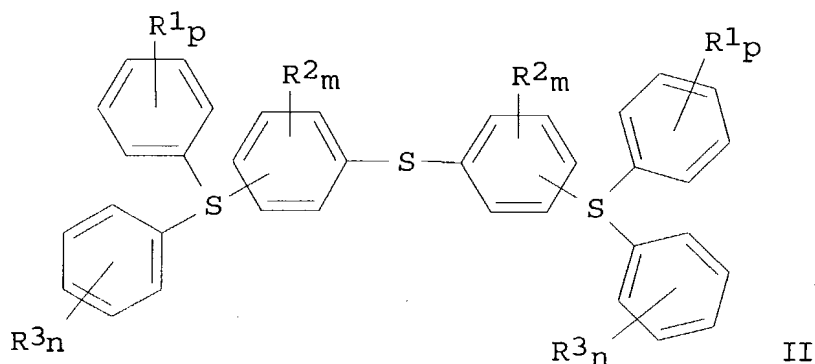
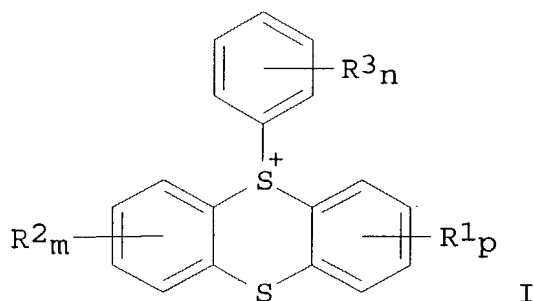


IC ICM G03F007-004  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
ST chem amplified **photoresist** tertiary amine  
IT **Photoresists**  
(chem.-amplification; contg. tertiary amines)  
IT 23978-09-8 23978-55-4 33941-15-0 66943-05-3,  
1,4,7,10-Tetraoxa-13-azacyclopentadecane 70384-51-9 73154-09-3  
(chem. amplified **photoresists** contg.)  
IT 3089-11-0 14159-45-6 24979-70-2 117458-06-7 129674-22-2  
138529-81-4 **157089-26-4 158593-28-3**  
**161453-44-7** 166597-59-7 177034-75-2 218770-98-0  
(chem. amplified **photoresists** contg. tertiary amines and)  
IT 211919-60-7P 218770-96-8P  
(prepn. and use in prep. chem. amplified **photoresists**)  
IT 102-71-6, Triethanolamine, reactions 107-30-2, Chloromethyl methyl ether 865-47-4 89268-03-1  
(reaction in prep. tertiary amines for chem. amplified **photoresists**)

L45 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2003 ACS  
1998:672413 Document No. 129:296167 Positive photosensitive composition. Aoi, Toshiaki; Takita, Satoshi; Uenishi, Kazuya (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 869393 A1 **19981007**, 83 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1998-105753 19980330.

PRIORITY: JP 1997-80666 19970331; JP 1997-81075 19970331.

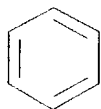
GI



- AB Provided is a pos. photosensitive compn. which has high photosensitivity, is capable of giving an excellent **resist** pattern, and changes little with time after exposure. The pos. photosensitive compn. comprises a resin having a group(s) capable of decomp. by the action of an acid to enhance soly. of the resin in an alk. developing soln. and a compd. represented by the formula I or II which is capable of **generating** a sulfonic **acid** upon irradiation with an actinic ray or a radiation wherein R1-3 each represents a hydrogen atom, an alkyl group, a cycloalkyl group, an alkoxy group, a hydroxy group, a halogen atom, or a group represented by -SR4, where R4 represents an alkyl group or an aryl group; X- represents the specific anion of a benzenesulfonic, naphthalenesulfonic, or anthracenesulfonic acid; and p, m, and n represents an integer of 1 to 3.
- IT 214208-07-8 214208-08-9 214208-09-0  
214208-11-4 214208-12-5 214208-14-7  
214272-39-6 214272-40-9  
(pos. photoresists contg.)
- RN 214208-07-8 HCAPLUS
- CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with octylbenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

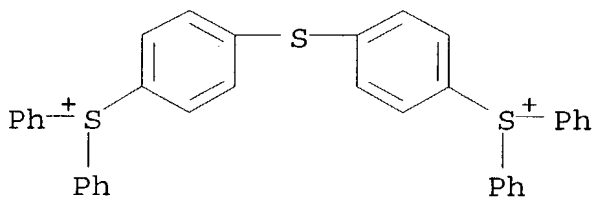
CM 1

CRN 82638-40-2  
CMF C14 H21 O3 S  
CCI IDS

D1-SO<sub>3</sub><sup>-</sup>Me-(CH<sub>2</sub>)<sub>7</sub>-D1

CM 2

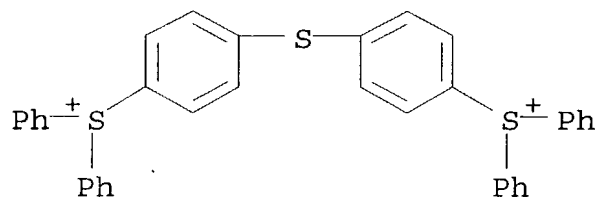
CRN 74227-34-2  
CMF C36 H28 S3



RN 214208-08-9 HCAPLUS  
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
dodecylbenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2  
CMF C36 H28 S3

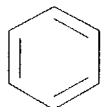


CM 2

CRN 1330-69-4

CMF C18 H29 O3 S

CCI IDS

D1-SO<sub>3</sub><sup>-</sup>Me-(CH<sub>2</sub>)<sub>11</sub>-D1

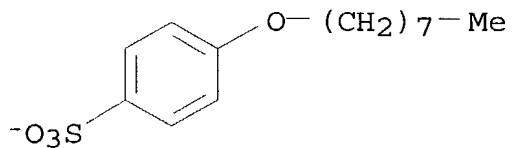
RN 214208-09-0 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
4-(octyloxy)benzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 214207-96-2

CMF C14 H21 O4 S

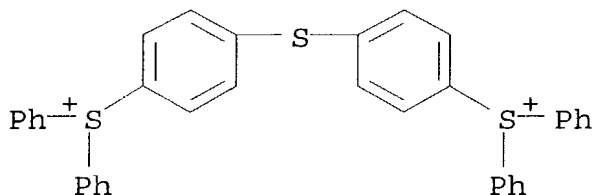


CM 2

CRN 74227-34-2



CMF C36 H28 S3



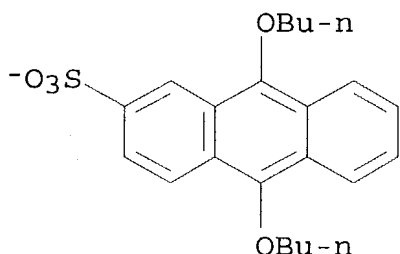
RN 214208-11-4 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
9,10-dibutoxy-2-anthracenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 152175-83-2

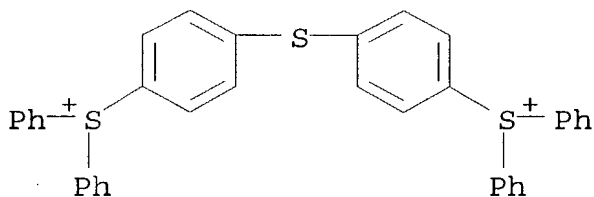
CMF C22 H25 O5 S



CM 2

CRN 74227-34-2

CMF C36 H28 S3

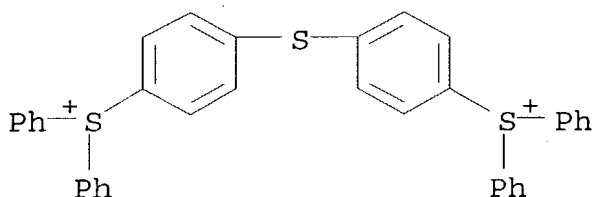


RN 214208-12-5 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
2,4,6-tris(1-methylethyl)benzenesulfonic acid (1:2) (9CI) (CA INDEX  
NAME)

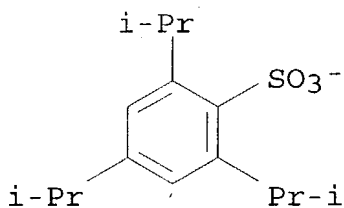
CM 1

CRN 74227-34-2  
CMF C36 H28 S3



CM 2

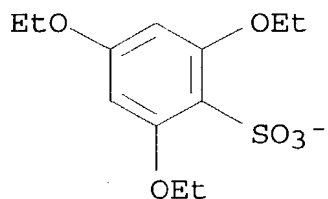
CRN 46950-23-6  
CMF C15 H23 O3 S



RN 214208-14-7 HCAPLUS  
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
2,4,6-triethoxybenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

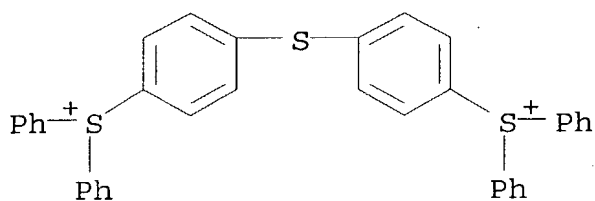
CM 1

CRN 214208-13-6  
CMF C12 H17 O6 S



CM 2

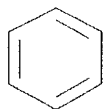
CRN 74227-34-2  
CMF C36 H28 S3



RN 214272-39-6 HCAPLUS  
 CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
 dibutylbenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 214272-38-5  
 CMF C14 H21 O3 S  
 CCI IDS

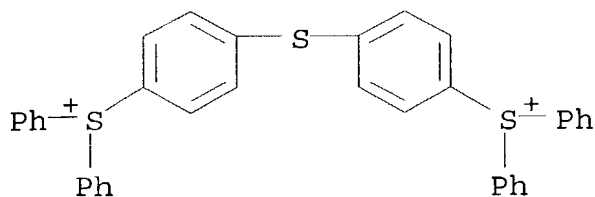


D1-SO<sub>3</sub><sup>-</sup>

2 ( D1-Bu-n )

CM 2

CRN 74227-34-2  
 CMF C36 H28 S3



RN 214272-40-9 HCAPLUS

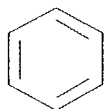
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with dioctylbenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 214272-36-3

CMF C22 H37 O3 S

CCI IDS



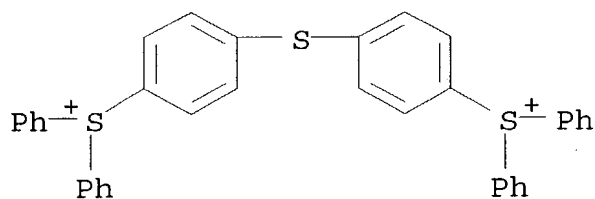
D1-SO<sub>3</sub><sup>-</sup>

2 [ Me- (CH<sub>2</sub>)<sub>7</sub>-D1 ]

CM 2

CRN 74227-34-2

CMF C36 H28 S3



IT 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 186769-12-0, p-(1-Butoxyethoxy)styrene-p-hydroxystyrene copolymer

(pos. photoresists contg. sulfonic acid-generating agents and)

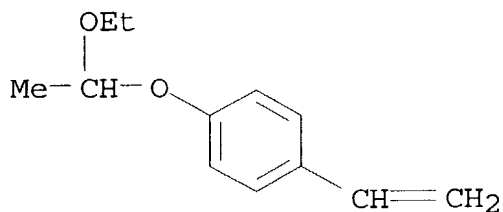
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

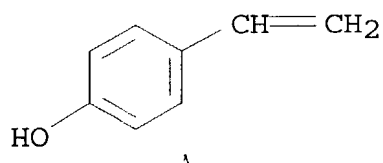
CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



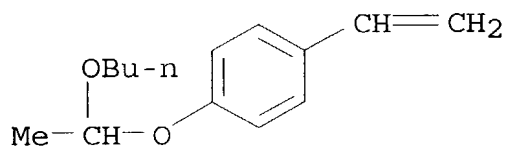
RN 186769-12-0 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-(1-butoxyethoxy)-4-ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 170635-32-2

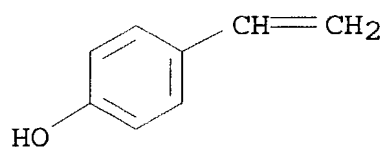
CMF C14 H20 O2



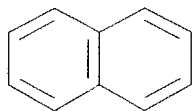
CM 2

CRN 2628-17-3

CMF C8 H8 O



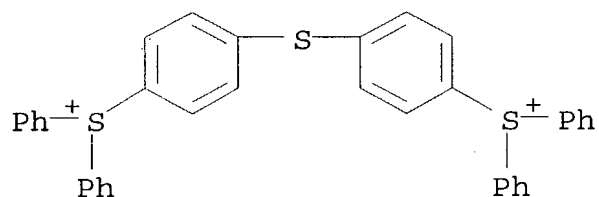
IT 214208-10-3  
 (prepn. and use in prepg. pos. photoresists)  
 RN 214208-10-3 HCAPLUS  
 CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with  
 dibutylnaphthalenesulfonic acid (1:2) (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 89413-16-1  
 CMF C18 H23 O3 S  
 CCI IDS



D1-SO<sub>3</sub><sup>-</sup>

2 ( D1-Bu-n )

CM 2  
 CRN 74227-34-2  
 CMF C36 H28 S3

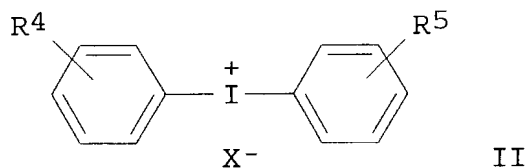
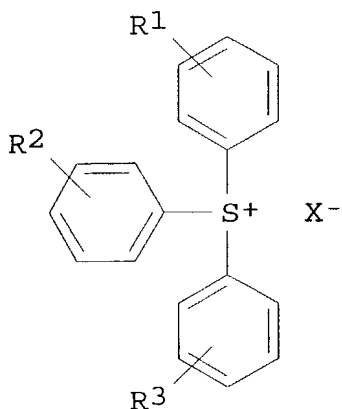


IC ICM G03F007-004

- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST pos **photoresist** sulfonic acid generating agent
- IT Positive **photoresists**  
(contg. sulfonic acid-generating agents)
- IT 214207-98-4 214207-99-5 214208-01-2 214208-03-4 214208-04-5  
214208-06-7 **214208-07-8** 214208-08-9  
**214208-09-0** 214208-11-4 214208-12-5  
214208-14-7 214272-37-4 **214272-39-6**  
**214272-40-9**  
(pos. **photoresists** contg.)
- IT 125325-82-8, p-(2-Tetrahydropyranyloxy)styrene-p-hydroxystyrene copolymer 142952-62-3, tert-Butoxycarbonylmethyloxystyrene-p-hydroxystyrene copolymer **158593-28-3**, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer **186769-12-0**, p-(1-Butoxyethoxy)styrene-p-hydroxystyrene copolymer  
(pos. **photoresists** contg. sulfonic acid-generating agents and)
- IT 153698-54-5 153698-65-8 153698-70-5 153840-05-2 159293-87-5  
214207-97-3 214208-05-6 **214208-10-3** 214208-16-9  
214208-17-0 214272-35-2  
(prepn. and use in prepg. pos. **photoresists**)

L45 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2003 ACS  
1998:512684 Document No. 129:223249 Coated product using positive-working photosensitive composition and patterning using same. Uenishi, Kazuya; Aogo, Toshiaki; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10213904 A2 **19980811** Heisei, 81 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1997-18916 19970131.

GI



AB The coated product comprises a substrate coated with an antireflection layer and then with a pos.-working **resist**

compn. layer contg. a compd. **generating** a sulfonic acid upon active ray or irradiation. I or II (R1-5 = H, alkyl, cycloalkyl, alkoxy, OH, halo, SR6 (R6 = alkyl or aryl); X- = anion of benzenesulfonic, naphthalenesulfonic or anthracenesulfonic acids having  $\geq 3$  C1 substituents or substituents in which the total C no. is  $\geq 4$ ) and a resin that is decomposed by the action of acid to increase the solubility in alkali developing solution. The product is patternwise exposed and developed to form a pattern. A high resolution resist pattern with good profile is obtained.

IT 197595-16-7P 197667-05-3P 207464-07-1P

(photoresist compn. contg. sulfonic acid generating agent and alkali-sol. resin)

RN 197595-16-7 HCAPLUS

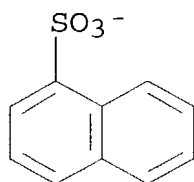
CN Sulfonium, triphenyl-, salt with bis(1,1-dimethylethyl)-1-naphthalenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197595-15-6

CMF C18 H23 O3 S

CCI IDS

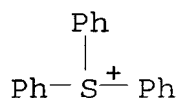


2 ( D1-Bu-t )

CM 2

CRN 18393-55-0

CMF C18 H15 S



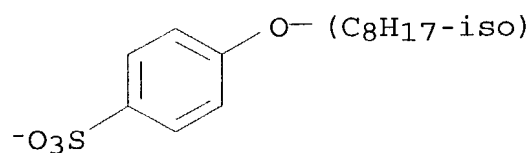
RN 197667-05-3 HCAPLUS

CN Sulfonium, triphenyl-, salt with 4-(isooctyloxy)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)



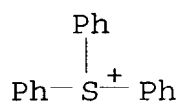
CM 1

CRN 197595-26-9  
CMF C14 H21 O4 S  
CCI IDS



CM 2

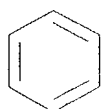
CRN 18393-55-0  
CMF C18 H15 S



RN 207464-07-1 HCAPLUS  
CN Sulfonium, triphenyl-, salt with isododecylbenzenesulfonic acid  
(1:1) (9CI) (CA INDEX NAME)

CM 1

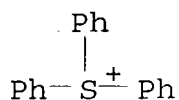
CRN 54164-46-4  
CMF C18 H29 O3 S  
CCI IDS

D1- ( $\text{C}_{12}\text{H}_{25}$ )D1-  $\text{SO}_3^-$

CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 158593-28-3, p-(1-Ethoxyethoxystyrene)-p-hydroxystyrene  
copolymer 196709-91-8, p-(1-tert-Butoxyethoxy)styrene-p-  
hydroxystyrene copolymer 197447-11-3 197595-14-5  
197667-06-4

(photoresist compn. contg. sulfonic acid  
generating agent and alkali-sol. resin)

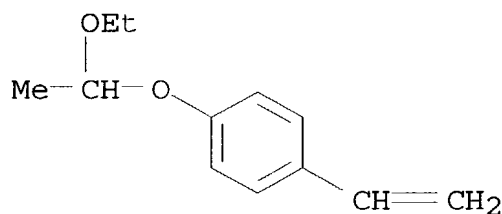
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

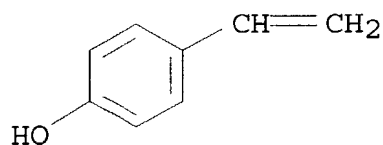
CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



RN 196709-91-8 HCAPLUS

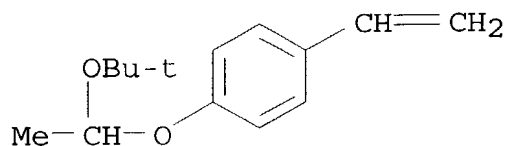
CN Phenol, 4-ethenyl-, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-

ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 169811-45-4

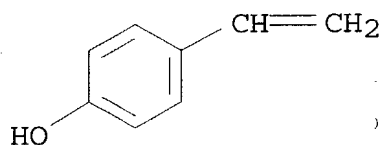
CMF C14 H20 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



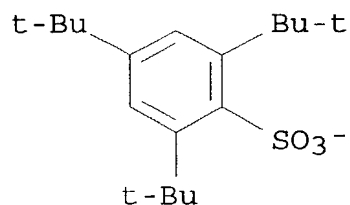
RN 197447-11-3 HCAPLUS

CN Sulfonium, triphenyl-, salt with 2,4,6-tris(1,1-dimethylethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197447-10-2

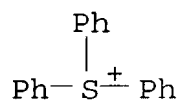
CMF C18 H29 O3 S



CM 2

CRN 18393-55-0

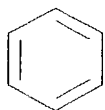
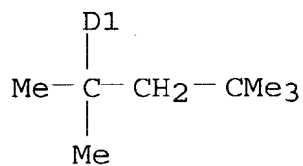
CMF C18 H15 S



RN 197595-14-5 HCAPLUS  
CN Sulfonium, (4-methoxyphenyl)diphenyl-, salt with  
(1,1,3,3-tetramethylbutyl)benzenesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

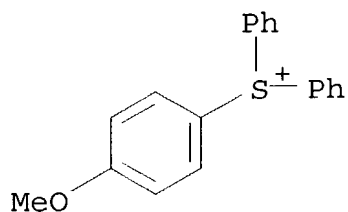
CM 1

CRN 197595-13-4  
CMF C14 H21 O3 S  
CCI IDS

D1-SO<sub>3</sub><sup>-</sup>

CM 2

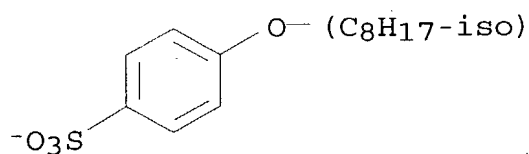
CRN 70084-23-0  
CMF C19 H17 O S



RN 197667-06-4 HCAPLUS  
 CN Sulfonium, (4-methoxyphenyl)diphenyl-, salt with  
 4-(isooctyloxy)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

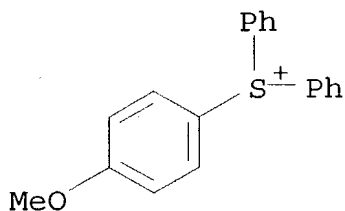
CM 1

CRN 197595-26-9  
 CMF C14 H21 O4 S  
 CCI IDS

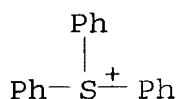


CM 2

CRN 70084-23-0  
 CMF C19 H17 O S



IT 4270-70-6, Triphenyl sulfonium chloride  
 (prepn. of sulfonic acid generator)  
 RN 4270-70-6 HCAPLUS  
 CN Sulfonium, triphenyl-, chloride (8CI, 9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

- IC ICM G03F007-039  
ICS C09D005-00; G03F007-004; G03F007-033; G03F007-11; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38
- ST **photoresist sulfonic acid generator;**  
alkali soluble polymer polyhydroxystyrene **photoresist;**  
dissoln inhibitor phenolic compd **photoresist**
- IT Polyesters, preparation  
(antireflection layer; **photoresist** compn. contg.  
sulfonic **acid generating** agent and  
alkali-sol. resin)
- IT Positive **photoresists**  
(**photoresist** compn. contg. sulfonic **acid**  
**generating** agent and alkali-sol. resin)
- IT 209848-19-1P 209848-21-5P 209848-23-7P 209848-26-0P  
209848-27-1P 209848-28-2P 212397-14-3P 212397-18-7P  
(antireflection layer; **photoresist** compn. contg.  
sulfonic **acid generating** agent and  
alkali-sol. resin)
- IT 153698-58-9P 153698-65-8P 153698-68-1P 153698-69-2P  
153698-70-5P 153840-05-2P 159293-87-5P  
(dissoln. inhibitor; **photoresist** compn. contg. sulfonic  
**acid generating** agent and alkali-sol. resin)
- IT 80-04-6DP, 2,2-Bis(4-hydroxycyclohexyl)propane, reaction products  
with poly(hydroxystyrene) 109-53-5DP, Iso-Butyl vinyl ether,  
ethers with poly(hydroxyphenylstyrene) 109-92-2DP, ethers with  
poly(hydroxyphenylstyrene) 926-02-3DP, tert-Butyl vinyl ether,  
reaction products with poly(hydroxystyrene) 24979-70-2DP,  
Poly(p-hydroxystyrene), reaction products with tert-Bu vinyl ether  
and bis(hydroxycyclohexyl)propane 197447-19-1P  
197595-16-7P 197595-32-7P 197667-05-3P  
207464-07-1P 207464-08-2P  
(**photoresist** compn. contg. sulfonic **acid**  
**generating** agent and alkali-sol. resin)
- IT 125325-82-8, p-Hydroxystyrene-p-(2-tetrahydropyranyloxy)styrene  
copolymer 142952-62-3, tert-Butoxycarbonylmethyloxystyrene-p-  
hydroxystyrene copolymer 158593-28-3, p-(1-  
Ethoxyethoxystyrene)-p-hydroxystyrene copolymer 196709-91-8  
, p-(1-tert-Butoxyethoxy)styrene-p-hydroxystyrene copolymer  
197447-11-3 197595-14-5 197595-29-2

197595-30-5 197667-06-4

(photoresist compn. contg. sulfonic acid  
generating agent and alkali-sol. resin)

IT 1483-72-3, Diphenyliodonium chloride

(prepn. of sulfonic acid generator)

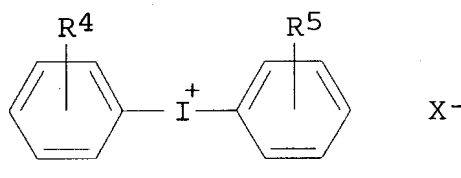
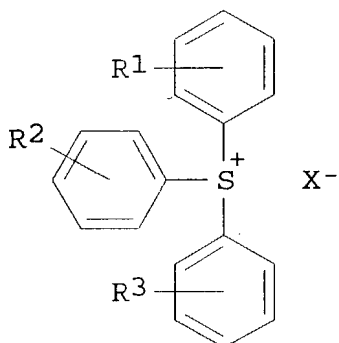
IT 4270-70-6, Triphenyl sulfonium chloride 5421-53-4,  
4,4'-Bis (tert-butylphenyl)iodonium chloride 25417-20-3, Sodium  
dibutyl naphthalenesulfonate 59952-82-8, Sodium  
isododecyl benzenesulfonate 197447-24-8, Sodium  
9,10-dibutoxy-2-anthracenesulfonate 197595-37-2 212489-87-7  
(prepn. of sulfonic acid generator)

L45 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2003 ACS

1998:298215 Document No. 129:47398 Positive-working photosensitive  
composition containing sulfonic acid generator.

Uenishi, Ichiya; Aogo, Toshiaki; Sato, Kenichiro; Kodama, Kunihiro  
(Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
10123703 A2 19980515 Heisei, 65 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1996-276565 19961018.

GI



AB The title compns. contain (a) an org. basic compd., (b) a compd. that **generates** sulfonic acid upon active ray or irradiation I or II [R1-5 = H, alkyl, cycloalkyl, alkoxy, OH, halo, SR6 (R6 = alkyl or aryl); X- = anion of benzenesulfonic, naphthalenesulfonic or anthracenesulfonic acid having .gtoreq.1 selected from branched or cyclic C.gtoeq.8 alkyl and alkoxy groups, .gtoreq.2 selected from straight-chain, branched or cyclic C4-7 alkyl and alkoxy groups or .gtoreq.3 selected from straight-chain or branched C1-3 alkyl and alkoxy groups], (c) a resin having a group that is decompd. by the action of acid to increase the soly. in alk. developing solns. and the molar ratio of b/a is 2.5-30.0. The compns. may contain (a) an org. basic compd., (b) an acid-decomposable group-contg. dissoln. inhibitor with mol. wt. .ltoreq.3000 of which the soly. in alk. developing solns. is increased by the action of acid, (c) a resin insol. in water and sol. in aq. alk. solns, and (d) the **acid-**

**generating** compd. I or II, in which the molar ratio d/a is 2.5-30.0. The compns. show high photosensitivity and provide high resolu. **resist** patterns with good profile independent of the elapse of time from exposure to bake.

IT 197595-16-7P 197667-05-3P 208038-55-5P

(photoresist compn. contg. org. base, sulfonic acid-generating agent, and alkali-sol. resin)

RN 197595-16-7 HCAPLUS

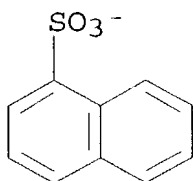
CN Sulfonium, triphenyl-, salt with bis(1,1-dimethylethyl)-1-naphthalenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197595-15-6

CMF C18 H23 O3 S

CCI IDS

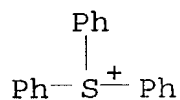


2 ( D1-Bu-t )

CM 2

CRN 18393-55-0

CMF C18 H15 S



RN 197667-05-3 HCAPLUS

CN Sulfonium, triphenyl-, salt with 4-(isooctyloxy)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

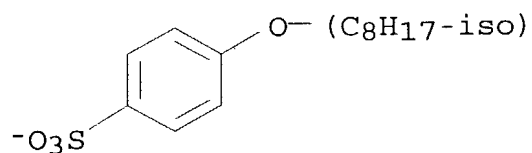
CM 1

CRN 197595-26-9

CMF C14 H21 O4 S

CCI IDS

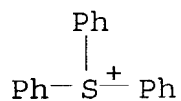




CM 2

CRN 18393-55-0

CMF C18 H15 S



RN 208038-55-5 HCAPLUS

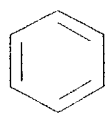
CN Sulfonium, triphenyl-, salt with (isododecyloxy)benzenesulfonic acid  
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 208038-54-4

CMF C18 H29 O4 S

CCI IDS



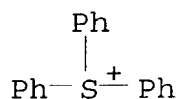
D1-O- (C12H25)

D1-SO<sub>3</sub><sup>-</sup>

CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene  
copolymer 196709-91-8, p-(1-tert-Butoxyethoxy)styrene-p-  
hydroxystyrene copolymer 197447-11-3 197447-15-7  
197447-16-8 197595-14-5 197667-06-4  
197667-07-5

(photoresist compn. contg. org. base, sulfonic  
acid-generating agent, and alkali-sol. resin)

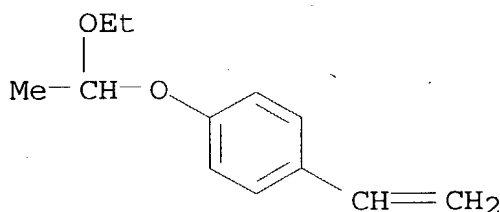
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

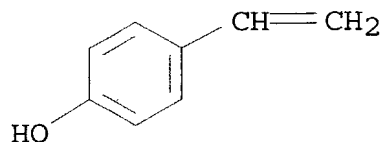
CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O

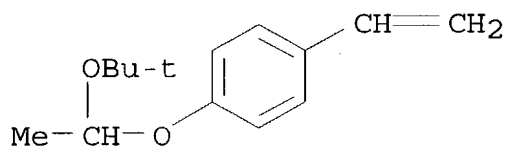


RN 196709-91-8 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-  
ethenylbenzene (9CI) (CA INDEX NAME)

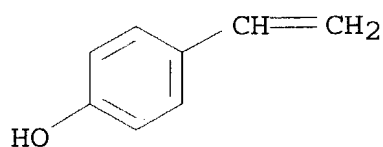
CM 1

CRN 169811-45-4  
CMF C14 H20 O2



CM 2

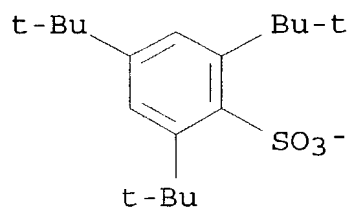
CRN 2628-17-3  
CMF C8 H8 O



RN 197447-11-3 HCAPLUS  
CN Sulfonium, triphenyl-, salt with 2,4,6-tris(1,1-dimethylethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

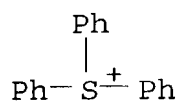
CM 1

CRN 197447-10-2  
CMF C18 H29 O3 S



CM 2

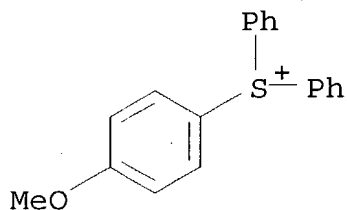
CRN 18393-55-0  
CMF C18 H15 S



RN 197447-15-7 HCAPLUS  
CN Sulfonium, (4-methoxyphenyl)diphenyl-, salt with  
2,4,6-trimethylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

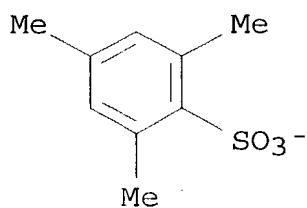
CM 1

CRN 70084-23-0  
CMF C19 H17 O S



CM 2

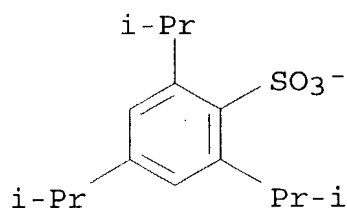
CRN 46149-61-5  
CMF C9 H11 O3 S



RN 197447-16-8 HCAPLUS  
CN Sulfonium, triphenyl-, salt with 2,4,6-tris(1-methylethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

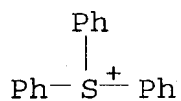
CRN 46950-23-6  
CMF C15 H23 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



RN 197595-14-5 HCAPLUS

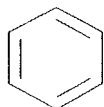
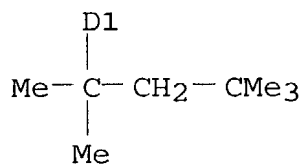
CN Sulfonium, (4-methoxyphenyl)diphenyl-, salt with  
 (1,1,3,3-tetramethylbutyl)benzenesulfonic acid (1:1) (9CI) (CA  
 INDEX NAME)

CM 1

CRN 197595-13-4

CMF C14 H21 O3 S

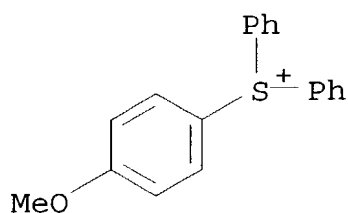
CCI IDS

D1-SO<sub>3</sub><sup>-</sup>

CM 2

CRN 70084-23-0

CMF C19 H17 O S



RN 197667-06-4 HCAPLUS

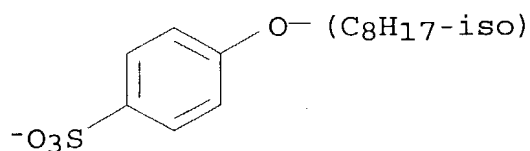
CN Sulfonium, (4-methoxyphenyl)diphenyl-, salt with  
4-(isooctyloxy)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197595-26-9

CMF C14 H21 O4 S

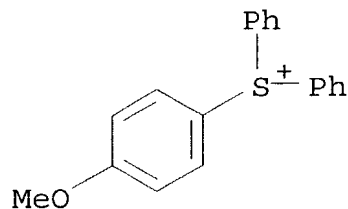
CCI IDS



CM 2

CRN 70084-23-0

CMF C19 H17 O S



RN 197667-07-5 HCAPLUS

CN Sulfonium, tris[4-(1,1-dimethylethoxy)phenyl]-, salt with

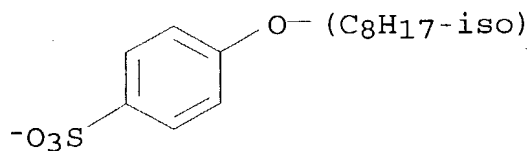
4-(isooctyloxy)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197595-26-9

CMF C14 H21 O4 S

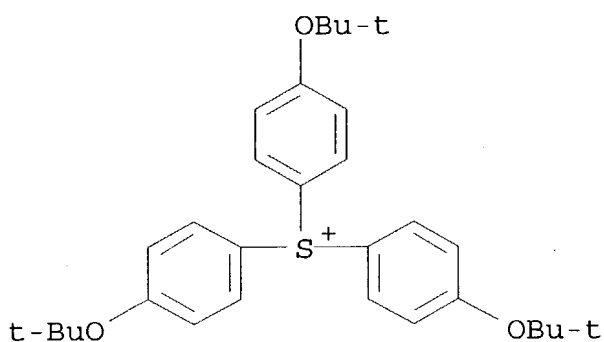
CCI IDS



CM 2

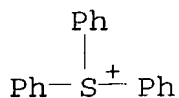
CRN 137455-55-1

CMF C30 H39 O3 S

IT 4270-70-6, Triphenylsulfonium chloride  
(prepn. of sulfonic acid generating compd.)

RN 4270-70-6 HCAPLUS

CN Sulfonium, triphenyl-, chloride (8CI, 9CI) (CA INDEX NAME)

● Cl<sup>-</sup>

- IC ICM G03F007-004  
ICS G03F007-004; G03F007-00; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST sulfonic **acid generator photoresist**;  
org base **photoresist** pos working; alkali soluble resin **photoresist**
- IT **Resists**  
(pos.-working; **photoresist** compn. contg. org. base, sulfonic **acid-generating** agent, and alkali-sol. resin)
- IT 153698-58-9P 153698-65-8P 153698-68-1P 153698-69-2P  
153698-70-5P 153840-05-2P 159293-87-5P 206869-62-7P  
(dissoln. inhibitor; **photoresist** compn. contg. org. base, sulfonic **acid-generating** agent, and alkali-sol. resin)
- IT 102826-48-2D, ethers 113629-59-7D, ethers 148452-55-5D, ethers  
148517-26-4D, ethers  
(dissoln. inhibitor; **photoresist** compn. contg. org. base, sulfonic **acid-generating** agent, and alkali-sol. resin)
- IT 197447-19-1P **197595-16-7P** 197595-32-7P  
**197667-05-3P** 207684-86-4P **208038-55-5P**  
208126-22-1P  
(**photoresist** compn. contg. org. base, sulfonic **acid-generating** agent, and alkali-sol. resin)
- IT 101-80-4 120-07-0 484-47-9, 2,4,5-Triphenylimidazole  
1122-58-3, 4-(Dimethylamino)pyridine 125325-82-8,  
p-Hydroxystyrene-p-(2-tetrahydropyranyloxy)styrene copolymer  
142952-62-3, tert-Butoxycarbonylmethyloxystyrene-p-hydroxystyrene  
copolymer **158593-28-3**, p-(1-Ethoxyethoxy)styrene-p-  
hydroxystyrene copolymer **196709-91-8**, p-(1-tert-  
Butoxyethoxy)styrene-p-hydroxystyrene copolymer **197447-11-3**  
**197447-15-7** **197447-16-8** **197595-14-5**  
197595-29-2 197595-30-5 197663-76-6 **197667-06-4**  
**197667-07-5**  
(**photoresist** compn. contg. org. base, sulfonic **acid-generating** agent, and alkali-sol. resin)
- IT 1483-72-3, Diphenyliodonium chloride **4270-70-6**,  
Triphenylsulfonium chloride 5421-53-4, 4,4'-Bis(tert-  
butylphenyl)iodonium chloride 25155-30-0, Sodium  
dodecylbenzenesulfonate 25417-20-3, Sodium  
dibutyl naphthalenesulfonate 197447-24-8 197595-37-2  
(prepn. of sulfonic acid generating compd.)
- L45 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2003 ACS  
1998:231236 Document No. 128:328771 Positive-type **photoresist**  
compositions. Uenishi, Kazuya; Sakaguchi, Shinji; Fujinomori, Akira  
(Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
10097075 A2 **19980414** Heisei, 58 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1997-125686 19970515. PRIORITY: JP  
1996-146180 19960607.



GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The title compns. comprise (A) CH<sub>2</sub>:C(Rx)C<sub>6</sub>H<sub>4</sub>OH copolymer with CH<sub>2</sub>:C(Rx)C<sub>6</sub>H<sub>4</sub>OC(Ra)(Rb)ORc and/or the copolymers contg. -C(Rd)(Re)ORfOC(Rg)(Rh)- crosslinking groups, (B) compds. **generating acids** upon irradiation of active light or radiation, and (C) I or II, wherein Rx = H, Me; Ra, Rb, Rd, Re, Rg, Rh = H, C1-8 alkyl, C3-6 cycloalkyl; Rc = C1-8 alkyl, C3-6 cycloalkyl, Q1; Rf = C1-6 alkylene, C3-6 cycloalkylene, Q2; Ri, Rj = H, C1-6 alkyl, C3-6 cycloalkylene; l + m = 100; m/(l + m) = 0.05-0.90; A = H, OH; E, G = Q3; R1-4 = H, XR13, halogen; R5, R6 = H, Me, Et, C1-2 haloalkyl; a-f, k-n = 0-3; g-j = 0-2; p = 1-3; D = direct bond, CO, S, SO<sub>2</sub>, CR5R6, -C(R5)(R6)C<sub>6</sub>H<sub>4</sub>C(R5)(R6)-; R8-12 = H, OH, CN, CO<sub>2</sub>H, XR13; R13 = C1-8 alkyl; X = direct bond, O, S, CO, O<sub>2</sub>C.

IT 66003-78-9 153698-46-5 177786-97-9  
(pos.-type photoresist compns.)

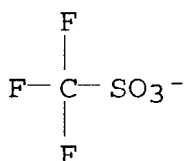
RN 66003-78-9 HCAPLUS

CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1)  
(9CI) (CA INDEX NAME)

CM 1

CRN 37181-39-8

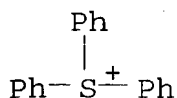
CMF C F3 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



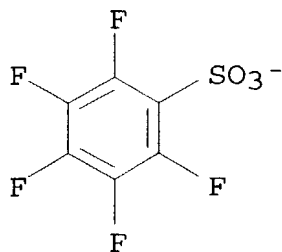
RN 153698-46-5 HCAPLUS

CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid  
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2

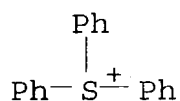
CMF C6 F5 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



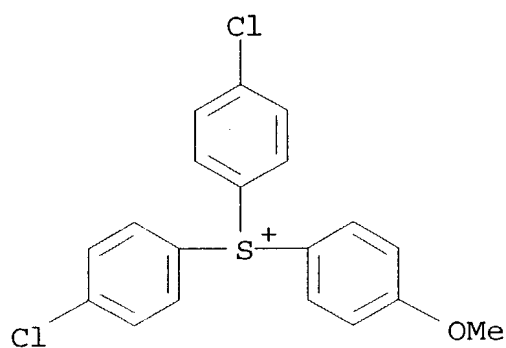
RN 177786-97-9 HCAPLUS

CN Sulfonium, bis(4-chlorophenyl)(4-methoxyphenyl)-, salt with  
trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 59626-65-2

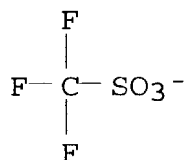
CMF C19 H15 Cl2 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



IT 158593-28-3 196709-91-8 199432-81-0  
(pos.-type photoresist compns.)

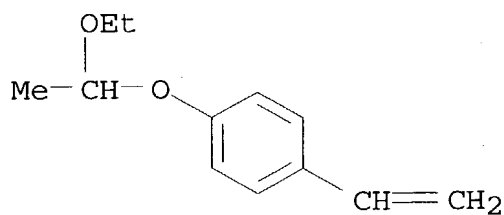
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene  
(9CI) (CA INDEX NAME)

CM 1

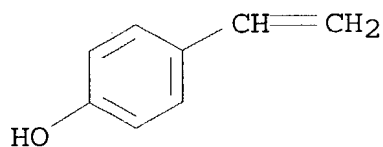
CRN 157057-20-0

CMF C12 H16 O2



CM 2

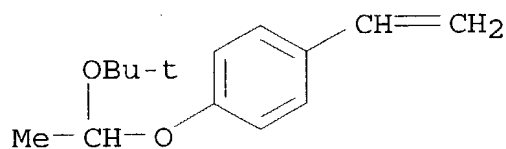
CRN 2628-17-3  
CMF C8 H8 O



RN 196709-91-8 HCAPLUS  
CN Phenol, 4-ethenyl-, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

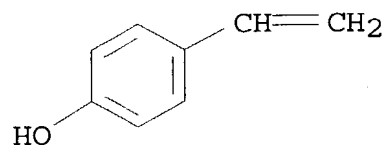
CM 1

CRN 169811-45-4  
CMF C14 H20 O2



CM 2

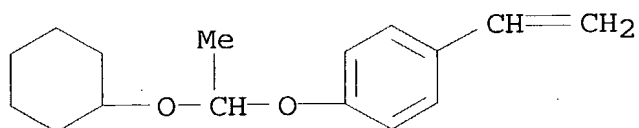
CRN 2628-17-3  
CMF C8 H8 O



RN 199432-81-0 HCAPLUS  
CN Phenol, 4-ethenyl-, polymer with 1-[1-(cyclohexyloxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

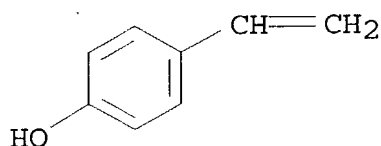
CRN 190434-67-4  
CMF C16 H22 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O

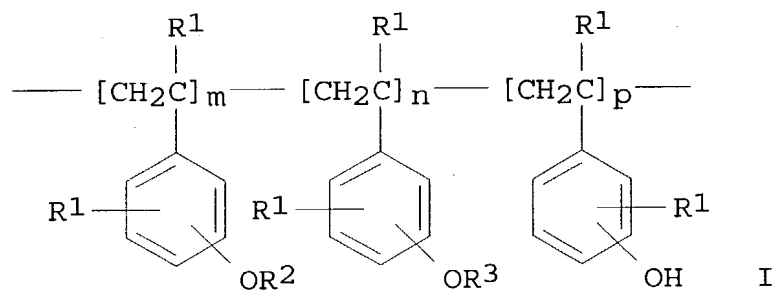


- IC ICM G03F007-039  
ICS G03F007-004; H01L021-027; H05K003-06; C08F012-22; C08L025-18
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76
- ST **photoresist** pos type styrene deriv polymer
- IT **Photoresists**  
(pos.-type **photoresist** compns.)
- IT 19361-97-8 31796-20-0 41580-58-9 56530-39-3 **66003-78-9**  
142096-70-6 **153698-46-5** 153698-67-0 **177786-97-9**  
199432-75-2 206861-49-6 206861-50-9 206861-52-1 206861-53-2  
206861-54-3  
(pos.-type **photoresist** compns.)
- IT 153698-54-5P 153698-63-6P 153698-65-8P 189103-11-5P  
189103-13-7P 189103-14-8P 189103-15-9P 206861-55-4P  
(pos.-type **photoresist** compns.)
- IT 107375-96-2P 110726-28-8P 110726-30-2P 110726-34-6P  
113629-59-7P 147079-30-9P 147079-31-0P 147079-32-1P  
147079-33-2P 147079-34-3P 147079-35-4P 147079-36-5P  
(pos.-type **photoresist** compns.)
- IT 24979-70-2, Poly(4-hydroxystyrene) 24979-74-6,  
p-Hydroxystyrene-styrene copolymer 87188-51-0 125325-82-8  
133685-94-6, o-Hydroxystyrene-p-hydroxystyrene copolymer  
142952-62-3, p-(tert-Butoxycarbonylmethoxy)styrene-p-hydroxystyrene  
copolymer **158593-28-3** 171429-59-7, p-Acetoxystyrene-p-  
hydroxystyrene copolymer **196709-91-8** **199432-81-0**  
206861-57-6 206861-58-7 206861-60-1 206861-61-2 206861-62-3  
(pos.-type **photoresist** compns.)
- IT 50-00-0, Formaldehyde, reactions 80-05-7, Bisphenol A, reactions  
80-09-1, Bisphenol S 95-48-7, o-Cresol, reactions 108-39-4,  
reactions 108-95-2, Phenol, reactions 110-87-2,  
3,4-Dihydro-2H-pyran 131-55-5, 2,2',4,4'-Tetrahydroxybenzophenone

576-26-1, 2,6-Dimethylphenol 611-99-4, 4,4'-Dihydroxybenzophenone  
 623-05-2, 4-Hydroxymethylphenol 3957-22-0 4397-14-2,  
 4-Hydroxymethyl-2,6-dimethylphenol 4466-18-6,  
 .alpha.,.alpha.',.alpha.''-Tris(4-hydroxyphenyl)-1,3,5-  
 triisopropylbenzene 5292-43-3, tert-Butyl bromoacetate  
 5359-04-6, p-Isopropenylacetophenone 24424-99-5, Di-tert-butyl  
 dicarbonate 76937-83-2, .alpha.,.alpha.,.alpha.',.alpha.',.alpha.'  
 ',.alpha.''-Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene  
 87771-42-4, Ethanone, 1-[3-(1-methylethenyl)phenyl]- 148452-55-5  
 153698-47-6, Cumyl bromoacetate  
 (pos.-type **photoresist** compns.)

L45 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2003 ACS  
 1998:66303 Document No. 128:186506 Chemical amplification-type  
 positive-working **resist**. Watanabe, Satoshi; Kukemura,  
 Katsuya; Nakura, Shigehiro (Shin-Etsu Chemical Industry Co., Ltd.,  
 Japan). Jpn. Kokai Tokkyo Koho JP 10020504 A2 **19980123**  
 Heisei, 22 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
 1996-188461 19960628.

GI



AB The **resist** contains (A) an org. solvent, (B) polymer I [R1  
 = H, Me; R2 = CR4R5OR6; R3 = group decomposable by acid; R4-5 = H,  
 C1-6 alkyl; R5 = C1-10 alkyl; R4 and R5, R4 and R6, R5 and R6 may  
 form a ring; 0 .ltoreq. m/(m + n + p) .ltoreq. 0.5; 0 .ltoreq. m/(m  
 + n + p) .ltoreq. 0.5; 0.4 .ltoreq. p/(m + n + p) .ltoreq. 0.9; m  
 .noteq. n .noteq. 0] with wt. av. mol. wt. 3000-300,000 as a base  
 resin, (C) an **acid generator**, and (D) an arom.  
 compd. having CCO2H group. The **resist** shows high  
 sensitivity to high energy rays, high resoln., and plasma etching  
 resistance.

IT 157089-26-4 161453-44-7

(**acid generator**; chem. amplification-type  
**resist** compn. contg. poly(hydroxystyrene) deriv. and  
 carboxylic acid compd.)

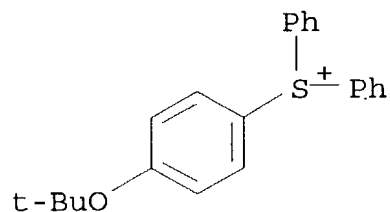
RN 157089-26-4 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with  
 trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 157089-25-3

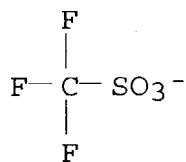
CMF C22 H23 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



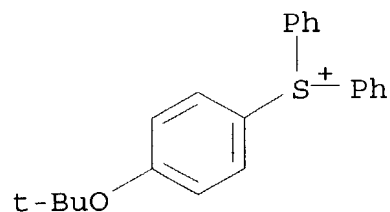
RN 161453-44-7 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with  
4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 157089-25-3

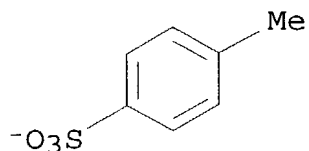
CMF C22 H23 O S



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



IT 158593-28-3

(chem. amplification-type **resist** compn. contg.  
poly(hydroxystyrene) deriv. and carboxylic acid compd.)

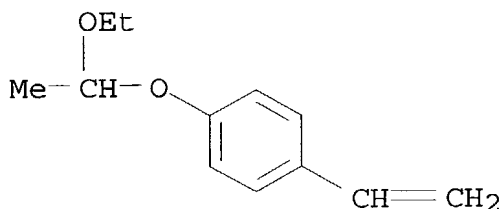
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

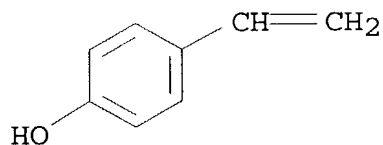
CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS G03F007-004; G03F007-033; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)

Section cross-reference(s): 38

ST polyhydroxystyrene deriv chem amplification **resist**;



carboxylic acid arom compd **resist**; **acid generator** chem amplification **resist**

IT **Resists**

(pos.-working; chem. amplification-type **resist** compn. contg. poly(hydroxystyrene) deriv. and carboxylic acid compd.)

IT 138529-81-4 138529-84-7 157089-26-4 161453-44-7

(**acid generator**; chem. amplification-type **resist** compn. contg. poly(hydroxystyrene) deriv. and carboxylic acid compd.)

IT 126-00-1 3539-42-2 92549-67-2 104105-16-0D, carboxymethyl ether derivs. 203257-78-7

(chem. amplification-type **resist** compn. contg. poly(hydroxystyrene) deriv. and carboxylic acid compd.)

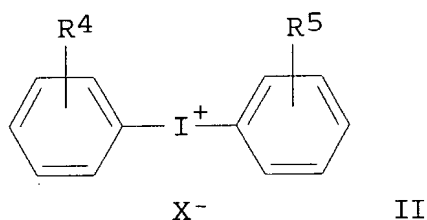
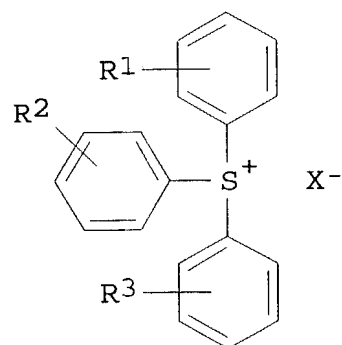
IT 158593-28-3 177034-75-2 199390-70-0

(chem. amplification-type **resist** compn. contg. poly(hydroxystyrene) deriv. and carboxylic acid compd.)

L45 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2003 ACS

1997:648762 Document No. 127:364166 Positive-working photosensitive composition containing sulfonic **acid generating** compound. Aoi, Toshiaki; Kodama, Kunihiro; Sato, Kenichiro; Uenishi, Kazuya; Yamanaka, Tsukasa (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09258435 A2 19971003 Heisei, 59 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-66664 19960322.

GI



AB. The title compn. contains a resin having groups which are decompd. by the action of acids to increase the soly. in alk. developing solns. and a compd. I or II [R1-5 = H, alkyl, cycloalkyl, alkoxy, OH, halo, SR6 (R6 = alkyl or aryl); X- = benzenesulfonic acid, naphthalenesulfonic acid, or anthracenesulfonic acid anion having .gtoreq.1 group selected from R7CO, R8CONH, R9NHCO, R10CONH, R11NHCO2, R12NHCONH, R13NHCSNH, R14SO2NH, nitro, (R7 = H, alkyl, cycloalkyl, aralkyl, aryl; R8-14 = alkyl, cycloalkyl, aralkyl, aryl)] which **generates** sulfonic **acid** upon irradiation. The compn. may comprise the sulfonic **acid**-

generating compd., an acid-decomposable dissoln. inhibitor with mol. wt. .ltoreq.3000 which has acid-decomposable groups and of which the soly. in alk. developing solns. increases by the action of acids, and a resin insol. in water and sol. in aq. alkali solns. The compn. shows high photosensitivity and provides high quality **resist** patterns with good profile independent of the elapse of time after exposure.

IT 198410-40-1P 198410-42-3P 198410-44-5P

(pos.-working photoresist compn. contg. sulfonic acid generating compd.)

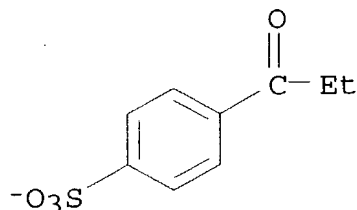
RN 198410-40-1 HCAPLUS

CN Sulfonium, triphenyl-, salt with 4-(1-oxopropyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 198410-39-8

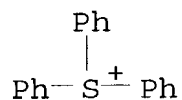
CMF C9 H9 O4 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



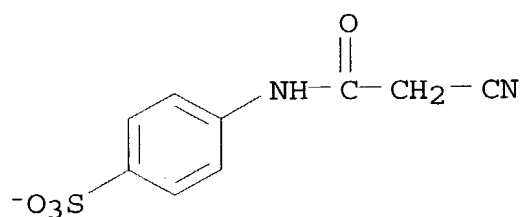
RN 198410-42-3 HCAPLUS

CN Sulfonium, triphenyl-, salt with 4-[(cyanoacetyl)amino]benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 198410-41-2

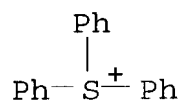
CMF C9 H7 N2 O4 S



CM 2

CRN 18393-55-0

CMF C18 H15 S

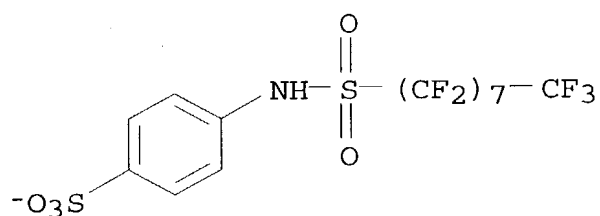


RN 198410-44-5 HCAPLUS  
 CN Sulfonium, triphenyl-, salt with 4-[[heptadecafluorooctyl)sulfonyl]amino]benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 198410-43-4

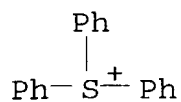
CMF C14 H5 F17 N O5 S2



CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene  
copolymer 186769-12-0, p-(1-Butoxyethoxy)styrene-p-  
hydroxystyrene copolymer 198410-51-4 198410-53-6  
198410-55-8 198410-57-0 198410-59-2  
198410-60-5 198410-62-7

(pos.-working photoresist compn. contg. sulfonic  
acid generating compd.)

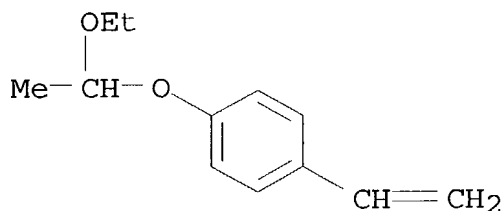
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

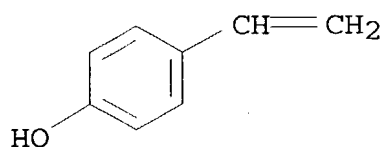
CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



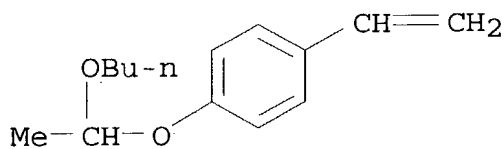
RN 186769-12-0 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-(1-butoxyethoxy)-4-ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 170635-32-2

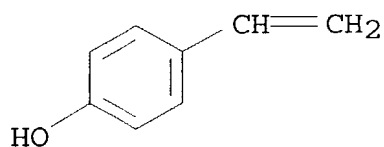
CMF C14 H20 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



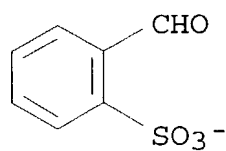
RN 198410-51-4 HCAPLUS

CN Sulfonium, tris[4-(1,1-dimethylethoxy)phenyl]-, salt with 2-formylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 198410-50-3

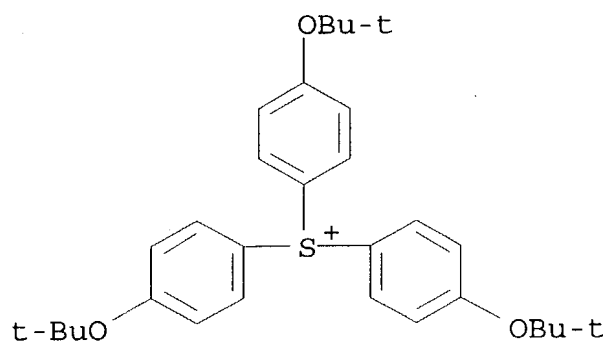
CMF C7 H5 O4 S



CM 2

CRN 137455-55-1

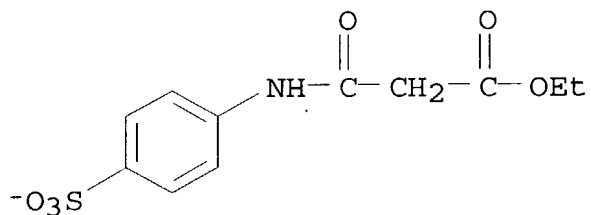
CMF C30 H39 O3 S



RN 198410-53-6 HCAPLUS  
 CN Sulfonium, triphenyl-, salt with 1-ethyl 3-oxo-3-[(4-sulfophenyl)amino]propanoate (1:1) (9CI) (CA INDEX NAME)

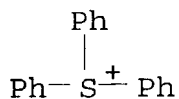
CM 1

CRN 198410-52-5  
 CMF C11 H12 N O6 S



CM 2

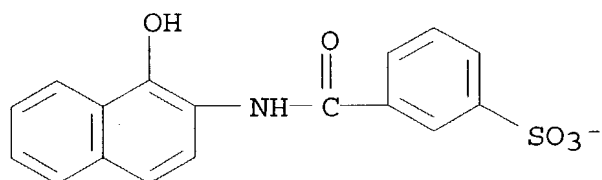
CRN 18393-55-0  
 CMF C18 H15 S



RN 198410-55-8 HCAPLUS  
 CN Sulfonium, triphenyl-, salt with 3-[[[(1-hydroxy-2-naphthalenyl)amino]carbonyl]benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

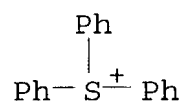
CM 1

CRN 198410-54-7  
CMF C17 H12 N O5 S



CM 2

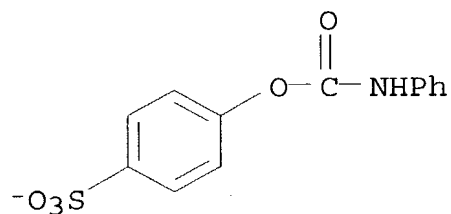
CRN 18393-55-0  
CMF C18 H15 S



RN 198410-57-0 HCAPLUS  
CN Sulfonium, triphenyl-, salt with 4-[[[(phenylamino)carbonyl]oxy]benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

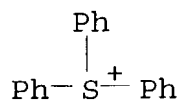
CM 1

CRN 198410-56-9  
CMF C13 H10 N O5 S



CM 2

CRN 18393-55-0  
CMF C18 H15 S

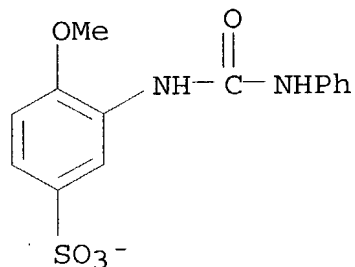


RN 198410-59-2 HCAPLUS  
 CN Sulfonium, (4-methoxyphenyl)diphenyl-, salt with  
 4-methoxy-3-[[ (phenylamino) carbonyl] amino] benzenesulfonic acid (1:1)  
 (9CI) (CA INDEX NAME)

CM 1

CRN 198410-58-1

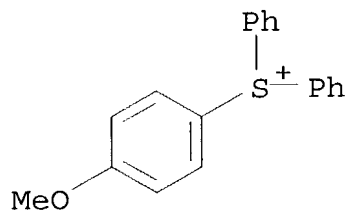
CMF C14 H13 N2 O5 S



CM 2

CRN 70084-23-0

CMF C19 H17 O S



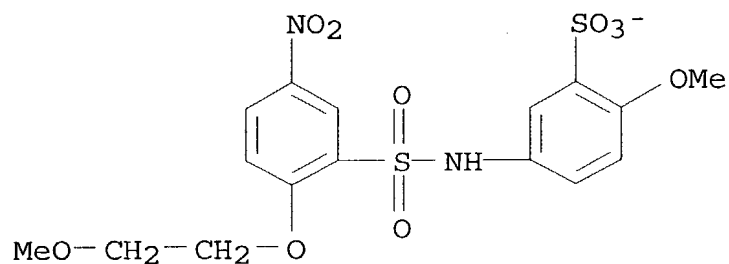
RN 198410-60-5 HCAPLUS  
 CN Sulfonium, triphenyl-, salt with 2-methoxy-5-[[[2-(2-methoxyethoxy)-  
 5-nitrophenyl]sulfonyl] amino] benzenesulfonic acid (1:1) (9CI) (CA  
 INDEX NAME)

CM 1

CRN 198410-47-8



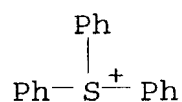
CMF C16 H17 N2 O10 S2



CM 2

CRN 18393-55-0

CMF C18 H15 S



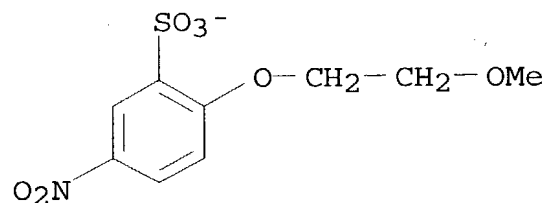
RN 198410-62-7 HCAPLUS

CN Sulfonium, triphenyl-, salt with 2-(2-methoxyethoxy)-5-nitrobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 198410-61-6

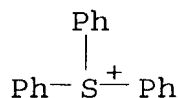
CMF C9 H10 N O7 S



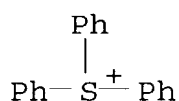
CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 4270-70-6, Triphenylsulfonium chloride  
(prepn. of sulfonic acid generating agent)  
RN 4270-70-6 HCAPLUS  
CN Sulfonium, triphenyl-, chloride (8CI, 9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

IC ICM G03F007-004  
ICS G03F007-004; C09K003-00; G03F007-039; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 37  
ST sulfonic acid generating compd  
photoresist; alkali sol resin photoresist; dissoln inhibitor photoresist  
IT Positive photoresists  
(pos.-working photoresist compn. contg. sulfonic acid generating compd.)  
IT 153698-58-9P 153698-65-8P 153698-68-1P 153698-69-2P  
153698-70-5P 153840-05-2P 159293-87-5P  
(dissoln. inhibitor; pos.-working photoresist compn. contg. sulfonic acid generating compd.)  
IT 153698-53-4 161715-09-9 194535-96-1 194535-97-2 194535-98-3  
196709-88-3 196709-96-3  
(dissoln. inhibitor; pos.-working photoresist compn. contg. sulfonic acid generating compd.)  
IT 198410-40-1P 198410-42-3P 198410-44-5P  
198410-46-7P 198410-48-9P 198410-49-0P  
(pos.-working photoresist compn. contg. sulfonic acid generating compd.)  
IT 125325-82-8, p-Hydroxystyrene-p-(2-tetrahydropyranyloxy)styrene copolymer 142952-62-3, tert-Butoxycarbonylmethyloxystyrene-p-hydroxystyrene copolymer 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 186769-12-0  
, p-(1-Butoxyethoxy)styrene-p-hydroxystyrene copolymer  
198410-51-4 198410-53-6 198410-55-8  
198410-57-0 198410-59-2 198410-60-5

198410-62-7 198410-64-9 198410-65-0 198410-67-2  
198410-69-4 198410-71-8

(pos.-working **photoresist** compn. contg. sulfonic  
**acid generating** compd.)

- IT 110-87-2, 3,4-Dihydro-2H-pyran 4466-18-6,  
.alpha.,.alpha.',.alpha.''-Tris(4-hydroxyphenyl)-1,3,5-  
triisopropylbenzene 5292-43-3, tert-Butyl bromoacetate  
24424-99-5, Di-tert-butyl dicarbonate 76937-83-2,  
.alpha.,.alpha.,.alpha.',.alpha.',.alpha.'',.alpha.''-Hexakis(4-  
hydroxyphenyl)-1,3,5-triethylbenzene 110726-28-8 153698-47-6,  
Cumyl bromoacetate  
(prepn. of **acid-decomposable** dissoln.  
inhibitor for **photoresist**)
- IT 1008-72-6, 2-Formylbenzenesulfonic **acid** sodium salt  
1483-72-3, Diphenyliodonium chloride **4270-70-6**,  
Triphenylsulfonium chloride 5421-53-4 172398-80-0 198410-73-0  
198410-74-1 198410-75-2 198410-76-3  
(prepn. of sulfonic **acid generating**  
agent)

L45 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2003 ACS

1997:632387 Document No. 127:339242 Positive photosensitive  
composition. Aoi, Toshiaki; Kodama, Kunihiro; Uenishi, Kazuya;  
Yamanaka, Tsukasa (Fuji Photo Film Co., Ltd., Japan). Eur. Pat.  
Appl. EP 795786 A2 **19970917**, 96 pp. DESIGNATED STATES: R:  
BE, DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP  
1997-103978 19970310. PRIORITY: JP 1996-53316 19960311; JP  
1996-138918 19960531; JP 1996-167976 19960627; JP 1997-27111  
19970210.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

- AB Provided is a pos. photosensitive compn. which has high  
photosensitivity, is capable of giving an excellent **resist**  
pattern, and changes little with time after exposure. The pos.  
photosensitive compn. comprises (1) a resin having a group(s)  
capable of decomp. by the action of an acid to enhance soly. of the  
resin in an alk. developing soln. and (2) a compd. represented by  
formula I, II, or III (R1-9 = H, alkyl, cycloalkyl, alkoxy, OH,  
halogen, or -SR10, where R10 = alkyl or aryl; X- = a  
benzenesulfonic, naphthalenesulfonic, or anthracenesulfonic acid  
anion; and m, n, p, q = an integer of 1 to 3) which is capable of  
**generating** a sulfonic **acid** upon irradiation with  
actinic rays or a radiation.

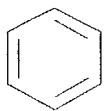
- IT **197845-90-2P**  
(photoacid generator for pos. chem.-amplification  
**photoresists**)

RN 197845-90-2 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]phenyl[4-(phenylthio)phenyl]-  
 , salt with sec-dodecylbenzenesulfonic acid (1:1) (9CI) (CA INDEX  
 NAME)

CM 1

CRN 199943-79-8  
 CMF C18 H29 O3 S  
 CCI IDS

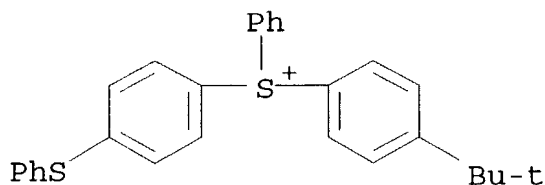


D1- (C<sub>12</sub>H<sub>25</sub>)

D1- SO<sub>3</sub><sup>-</sup>

CM 2

CRN 75482-25-6  
 CMF C28 H27 S2



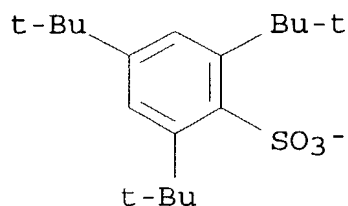
IT 197447-11-3 197447-12-4 197447-13-5  
 197447-15-7 197447-16-8 197447-21-5  
 197447-23-7 197595-14-5 197595-18-9  
 197595-20-3 197595-33-8 197595-35-0  
 197595-36-1 197663-75-5 197667-06-4  
 197667-07-5 197730-16-8

(photoacid generator for pos. chem.-amplification  
 photoresists)

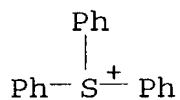
RN 197447-11-3 HCAPLUS

CN Sulfonium, triphenyl-, salt with 2,4,6-tris(1,1-  
 dimethylethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

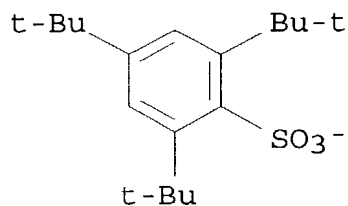
CM 1

CRN 197447-10-2  
CMF C18 H29 O3 S

CM 2

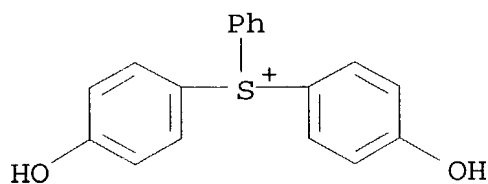
CRN 18393-55-0  
CMF C18 H15 SRN 197447-12-4 HCAPLUS  
CN Sulfonium, bis(4-hydroxyphenyl)phenyl-, salt with  
2,4,6-tris(1,1-dimethylethyl)benzenesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

CM 1

CRN 197447-10-2  
CMF C18 H29 O3 S

CM 2

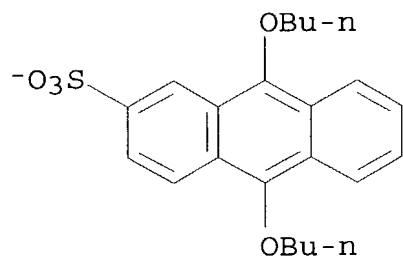
CRN 120397-56-0  
CMF C18 H15 O2 S



RN 197447-13-5 HCAPLUS  
 CN Sulfonium, (4-methoxyphenyl)diphenyl-, salt with  
 9,10-dibutoxy-2-anthracenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

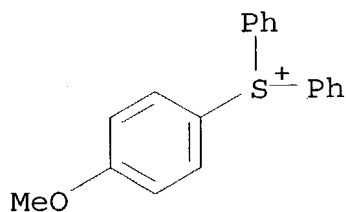
CM 1

CRN 152175-83-2  
 CMF C22 H25 O5 S



CM 2

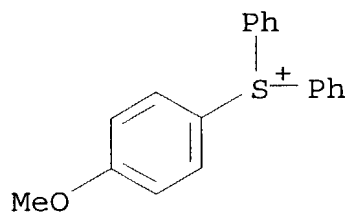
CRN 70084-23-0  
 CMF C19 H17 O S



RN 197447-15-7 HCAPLUS  
 CN Sulfonium, (4-methoxyphenyl)diphenyl-, salt with  
 2,4,6-trimethylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

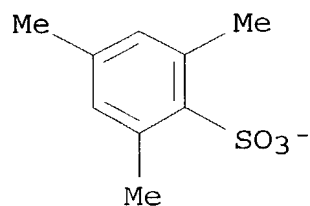
CM 1

CRN 70084-23-0  
CMF C19 H17 O S



CM 2

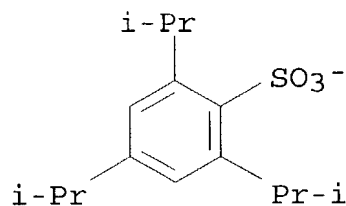
CRN 46149-61-5  
CMF C9 H11 O3 S



RN 197447-16-8 HCAPLUS  
CN Sulfonium, triphenyl-, salt with 2,4,6-tris(1-methylethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

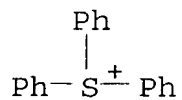
CRN 46950-23-6  
CMF C15 H23 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



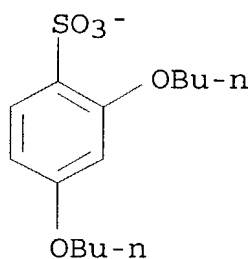
RN 197447-21-5 HCAPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with  
2,4-dibutoxybenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197447-20-4

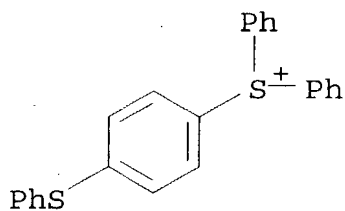
CMF C14 H21 O5 S



CM 2

CRN 47480-44-4

CMF C24 H19 S2



RN 197447-23-7 HCAPLUS

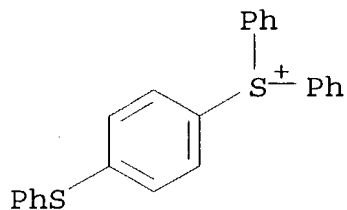
CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with  
2,4,6-tris(1-methylethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47480-44-4



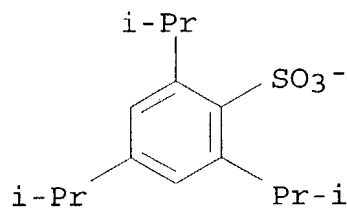
CMF C24 H19 S2



CM 2

CRN 46950-23-6

CMF C15 H23 O3 S



RN 197595-14-5 HCAPLUS

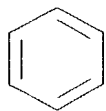
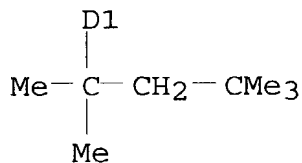
CN Sulfonium, (4-methoxyphenyl)diphenyl-, salt with  
(1,1,3,3-tetramethylbutyl)benzenesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

CM 1

CRN 197595-13-4

CMF C14 H21 O3 S

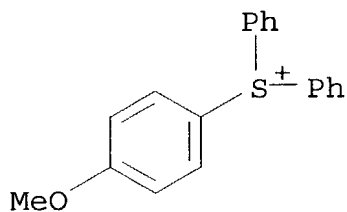
CCI IDS

D1-SO<sub>3</sub><sup>-</sup>

CM 2

CRN 70084-23-0

CMF C19 H17 O S



RN 197595-18-9 HCAPLUS

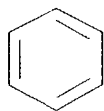
CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with  
bis(1,1-dimethylethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX  
NAME)

CM 1

CRN 197595-17-8

CMF C14 H21 O3 S

CCI IDS

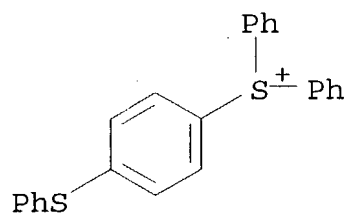
D1-SO<sub>3</sub><sup>-</sup>

2 ( D1-Bu-t )

CM 2

CRN 47480-44-4

CMF C24 H19 S2



RN 197595-20-3 HCAPLUS

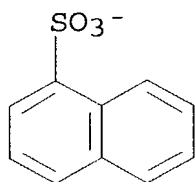
CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]phenyl[4-(phenylthio)phenyl]-  
 , salt with bis(1,1-dimethylethyl)-1-naphthalenesulfonic acid (1:1)  
 (9CI) (CA INDEX NAME)

CM 1

CRN 197595-15-6

CMF C18 H23 O3 S

CCI IDS

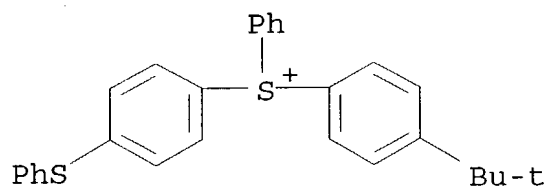


2 ( D1-Bu-t )

CM 2

CRN 75482-25-6

CMF C28 H27 S2



RN 197595-33-8 HCAPLUS

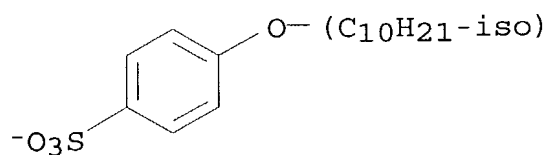
CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with  
4-(isodecyloxy)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197595-28-1

CMF C16 H25 O4 S

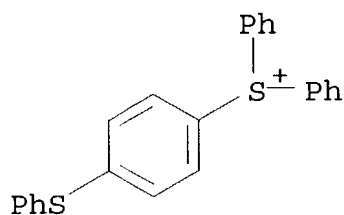
CCI IDS



CM 2

CRN 47480-44-4

CMF C24 H19 S2



RN 197595-35-0 HCAPLUS

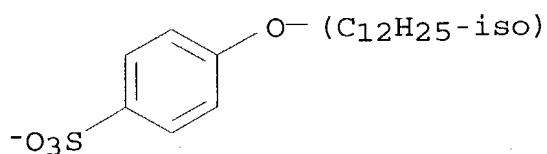
CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]phenyl[4-(phenylthio)phenyl]-, salt with 4-(isododecyloxy)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197595-34-9

CMF C18 H29 O4 S

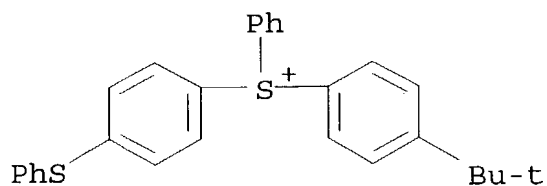
CCI IDS



CM 2

CRN 75482-25-6

CMF C28 H27 S2

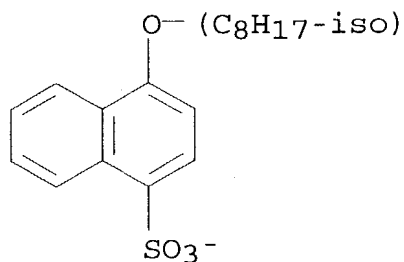


RN 197595-36-1 HCAPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with 4-(isooctyloxy)-1-naphthalenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

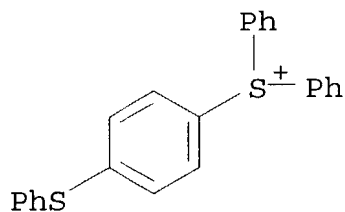
CM 1

CRN 197595-31-6  
 CMF C18 H23 O4 S  
 CCI IDS



CM 2

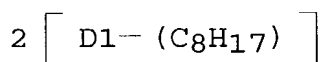
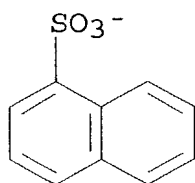
CRN 47480-44-4  
 CMF C24 H19 S2



RN 197663-75-5 HCAPLUS  
 CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with  
 di-sec-octyl-1-naphthalenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

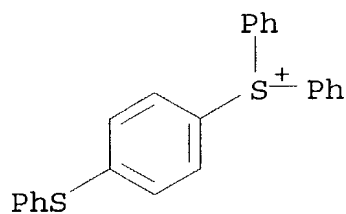
CRN 197595-23-6  
 CMF C26 H39 O3 S  
 CCI IDS



CM 2

CRN 47480-44-4

CMF C24 H19 S2



RN 197667-06-4 HCAPLUS

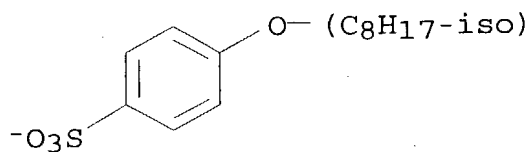
CN Sulfonium, (4-methoxyphenyl)diphenyl-, salt with  
4-(isooctyloxy)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197595-26-9

CMF C14 H21 O4 S

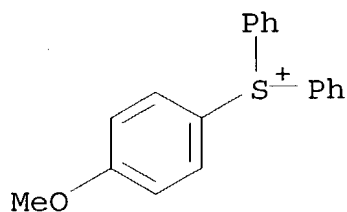
CCI IDS



CM 2

CRN 70084-23-0

CMF C19 H17 O S



RN 197667-07-5 HCAPLUS

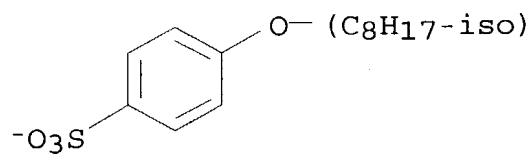
CN Sulfonium, tris[4-(1,1-dimethylethoxy)phenyl]-, salt with  
4-(isooctyloxy)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197595-26-9

CMF C14 H21 O4 S

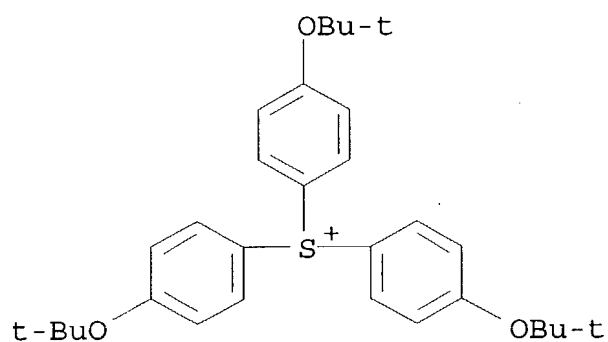
CCI IDS



CM 2

CRN 137455-55-1

CMF C30 H39 O3 S



RN 197730-16-8 HCAPLUS

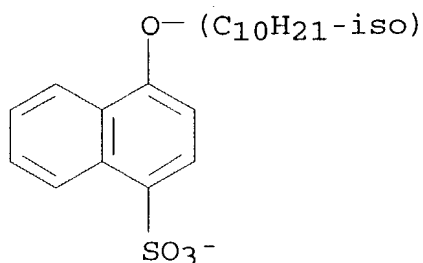
CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with



4-(isodecyloxy)-1-naphthalenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

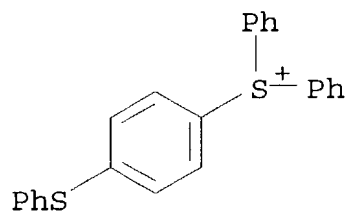
CM 1

CRN 197730-15-7  
CMF C20 H27 O4 S  
CCI IDS



CM 2

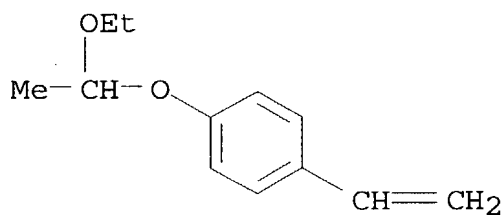
CRN 47480-44-4  
CMF C24 H19 S2



IT 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 196709-91-8, p-(1-tert-Butoxyethoxy)styrene-p-hydroxystyrene copolymer  
(pos. chem.-amplification **photoresists** contg.  
arylsulfonium arylsulfonate **photoacid** generators and)  
RN 158593-28-3 HCAPLUS  
CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

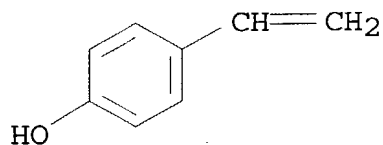
CRN 157057-20-0  
CMF C12 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



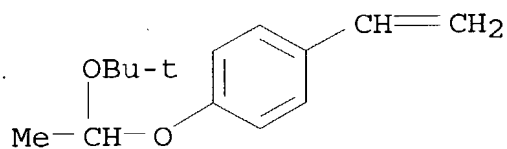
RN 196709-91-8 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 169811-45-4

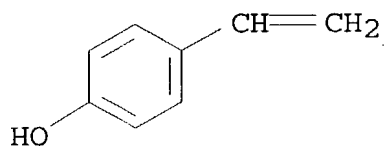
CMF C14 H20 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IT 197447-09-9P 197447-14-6P 197447-22-6P  
 197595-16-7P 197595-19-0P 197595-27-0P  
 197667-05-3P

(prepn. and use as **photoacid** generator for pos.  
 chem.-amplification **photoresists**)

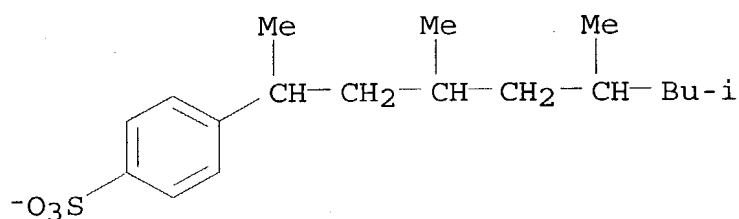
RN 197447-09-9 HCAPLUS

CN Sulfonium, triphenyl-, salt with 4-(1,3,5,7-tetramethyloctyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197447-08-8

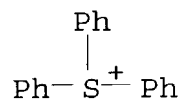
CMF C18 H29 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



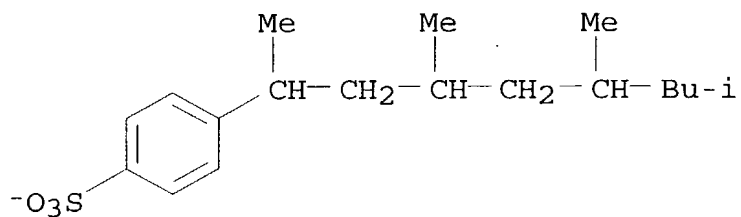
RN 197447-14-6 HCAPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with  
 4-(1,3,5,7-tetramethyloctyl)benzenesulfonic acid (1:1) (9CI) (CA  
 INDEX NAME)

CM 1

CRN 197447-08-8

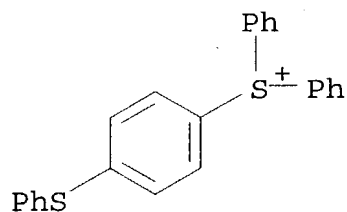
CMF C18 H29 O3 S



CM 2

CRN 47480-44-4

CMF C24 H19 S2



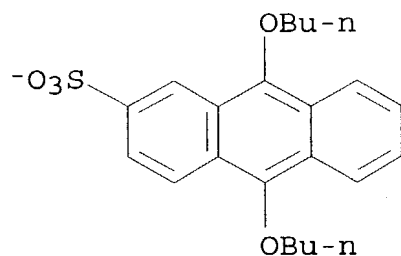
RN 197447-22-6 HCAPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with  
9,10-dibutoxy-2-anthracenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 152175-83-2

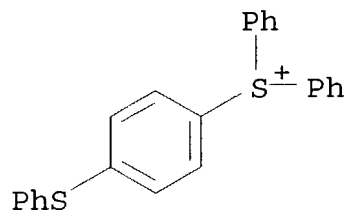
CMF C22 H25 O5 S



CM 2

CRN 47480-44-4

CMF C24 H19 S2



RN 197595-16-7 HCAPLUS

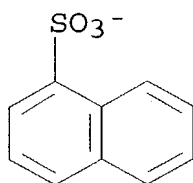
CN Sulfonium, triphenyl-, salt with bis(1,1-dimethylethyl)-1-naphthalenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197595-15-6

CMF C18 H23 O3 S

CCI IDS

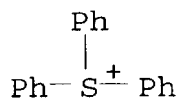


2 ( D1-Bu-t )

CM 2

CRN 18393-55-0

CMF C18 H15 S

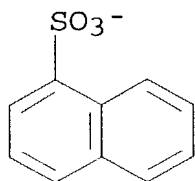


RN 197595-19-0 HCAPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with bis(1,1-dimethylethyl)-1-naphthalenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

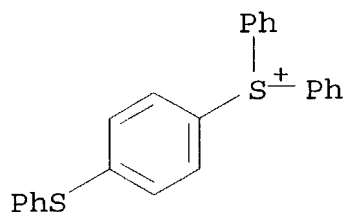
CRN 197595-15-6  
CMF C18 H23 O3 S  
CCI IDS



2 ( D1-Bu-t )

CM 2

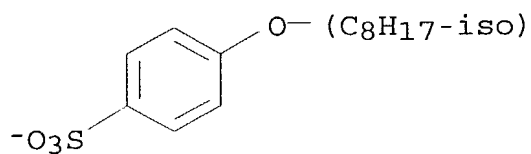
CRN 47480-44-4  
CMF C24 H19 S2



RN 197595-27-0 HCAPLUS  
CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with  
4-(isooctyloxy)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

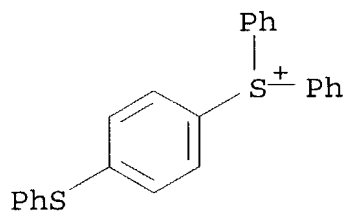
CRN 197595-26-9  
CMF C14 H21 O4 S  
CCI IDS



CM 2

CRN 47480-44-4

CMF C24 H19 S2



RN 197667-05-3 HCAPLUS

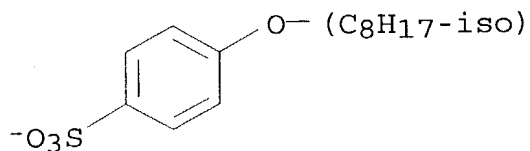
CN Sulfonium, triphenyl-, salt with 4-(isooctyloxy)benzenesulfonic acid  
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197595-26-9

CMF C14 H21 O4 S

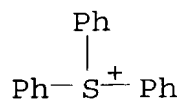
CCI IDS



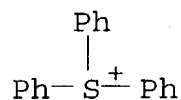
CM 2

CRN 18393-55-0

CMF C18 H15 S

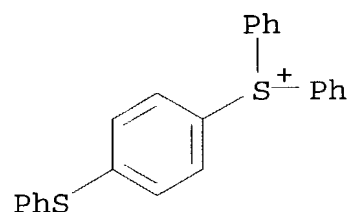


IT 4270-70-6, Triphenylsulfonium chloride 80468-75-3,  
 Diphenyl-4-phenylthiophenylsulfonium chloride  
 (reaction in prepg. **photoacid** generator for pos.  
 chem.-amplification **photoresists**)  
 RN 4270-70-6 HCAPLUS  
 CN Sulfonium, triphenyl-, chloride (8CI, 9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

RN 80468-75-3 HCAPLUS  
 CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, chloride (9CI) (CA  
 INDEX NAME)



● Cl<sup>-</sup>

IC ICM G03F007-004  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 ST pos **photoresist photoacid** generator  
 arylsulfonium arylsulfonate; lithog plate pos **photoresist**  
 arylsulfonium arylsulfonate  
 IT Positive **photoresists**  
 (chem.-amplification; arylsulfonium arylsulfonate  
**photoacid** generators for)  
 IT Integrated circuits



## Lithographic plates

(pos. photosensitive compns. contg. alk. soln.-sol. resins and arylsulfonium arylsulfonate **photoacid** generators for manuf. of)

## IT Photoimaging materials

(pos.; contg. alk. soln.-sol. resins and arylsulfonium arylsulfonate **photoacid** generators)

## IT 197845-90-2P

(**photoacid** generator for pos. chem.-amplification **photoresists**)

## IT 197447-11-3 197447-12-4 197447-13-5

197447-15-7 197447-16-8 197447-18-0

197447-21-5 197447-23-7 197595-14-5

197595-18-9 197595-20-3 197595-24-7

197595-29-2 197595-30-5 197595-33-8 197595-35-0

197595-36-1 197663-75-5 197663-76-6

197667-06-4 197667-07-5 197730-16-8

(**photoacid** generator for pos. chem.-amplification **photoresists**)

## IT 24979-74-6, p-Hydroxystyrene-styrene copolymer 125325-82-8,

p-Hydroxystyrene-p-(2-tetrahydropyranyloxy)styrene copolymer

133685-94-6, o-Hydroxystyrene-p-hydroxystyrene copolymer

142952-62-3, tert-Butoxycarbonylmethoxystyrene-p-hydroxystyrene

copolymer 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-

hydroxystyrene copolymer 171429-59-7, p-Acetoxystyrene-p-

hydroxystyrene copolymer 196709-91-8, p-(1-tert-

Butoxyethoxy)styrene-p-hydroxystyrene copolymer

(pos. chem.-amplification **photoresists** contg.

arylsulfonium arylsulfonate **photoacid** generators and)

## IT 153698-53-4P 153698-58-9P 153698-65-8P 153698-68-1P

153698-69-2P 153698-70-5P 153840-05-2P 159293-87-5P

161715-09-9P 194535-96-1P 194535-97-2P 194535-98-3P

196709-88-3P 196709-96-3P

(prepn. and use as dissoln. inhibitor for pos.

chem.-amplification **photoresists**)

## IT 197447-09-9P 197447-14-6P 197447-17-9P

197447-19-1P 197447-22-6P 197595-16-7P

197595-19-0P 197595-27-0P 197595-32-7P

197667-05-3P

(prepn. and use as **photoacid** generator for pos.

chem.-amplification **photoresists**)

## IT 110-87-2, 3,4-Dihydro-2H-pyran 865-47-4, Potassium tert-butoxide

4466-18-6, .alpha.,.alpha.,.alpha.'-.alpha.'-Tris(4-hydroxyphenyl)-1,3,5-

triisopropylbenzene 5292-43-3, tert-Butyl bromoacetate

24424-99-5, Di-tert-butyl dicarbonate 76937-83-2,

.alpha.,.alpha.,.alpha.'-.alpha.'-.alpha.'-.alpha.'-Hexakis(4-

hydroxyphenyl)-1,3,5-triethylbenzene 110726-28-8,

1-[[.alpha.-Methyl-.alpha.-(4'-hydroxyphenyl)ethyl]-4-

[.alpha.'-.alpha.'-bis(4''-hydroxyphenyl)ethyl]benzene

153698-47-6, Cumyl bromoacetate

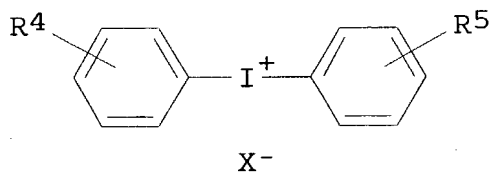
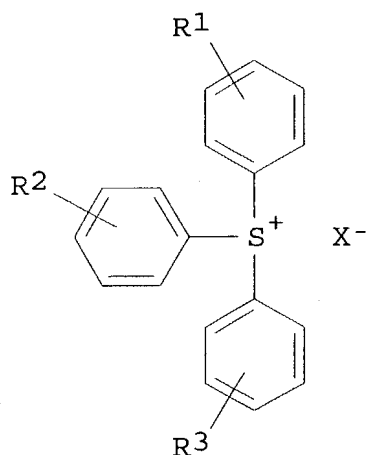
(reaction in prepg. dissoln. inhibitor for pos.

chem.-amplification **photoresists**)

IT 1483-72-3, Diphenyliodonium chloride 4270-70-6,  
 Triphenylsulfonium chloride 5421-53-4, 4,4'-Bis(tert-  
 butylphenyl)iodonium chloride 35177-74-3 80468-75-3,  
 Diphenyl-4-phenylthiophenylsulfonium chloride 197447-24-8  
 197595-21-4 197595-37-2  
 (reaction in prepg. **photoacid** generator for pos.  
 chem.-amplification **photoresists**)

L45 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2003 ACS  
 1997:611994 Document No. 127:285926 Positive-working photosensitive  
 composition. Aoai, Toshiaki; Kodama, Kunihiro; Uenishi, Kazuya;  
 Yamanaka, Tsukasa (Fuji Photo Film Co., Ltd., Japan). Eur. Pat.  
 Appl. EP 794457 A2 19970910, 79 pp. DESIGNATED STATES: R:  
 BE, DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP  
 1997-103894 19970307. PRIORITY: JP 1996-52006 19960308.

GI



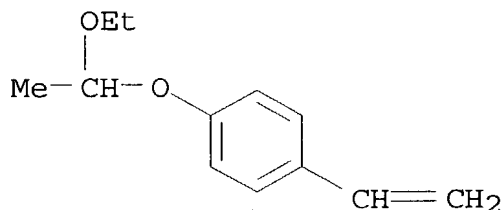
AB A pos.-working photosensitive compn. for fabrication of lithog.  
 plates and semiconductor devices is disclosed, which comprises (a) a  
 resin having groups capable of increasing soly. of the resin in an

alkali developer through their decompn. due to the action of an acid and (b) a compd. represented by formula I or II ( $R_1-5 = H, OH,$  halogen, alkyl, cycloalkyl, alkoxy, or  $SR_6$  where  $R_6 =$  alkyl or aryl;  $X^- =$  a benzenesulfonic, naphthalenesulfonic, or anthracenesulfonic acid anion having .gtoreq.1 ester group) **generating** a sulfonic **acid** by irradiation with active rays or radiant rays.

IT 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 196709-91-8, p-(1-tert-Butoxyethoxy)styrene-p-hydroxystyrene copolymer  
(pos. photosensitive compns. for photofabrication contg. triphenylsulfonium arylsulfonates or diphenyliodonium arylsulfonates and)  
RN 158593-28-3 HCAPLUS  
CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

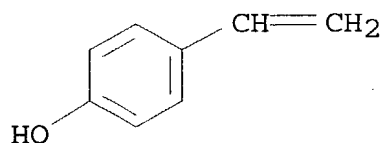
CM 1

CRN 157057-20-0  
CMF C12 H16 O2



CM 2

CRN 2628-17-3  
CMF C8 H8 O

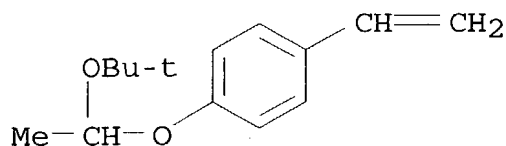


RN 196709-91-8 HCAPLUS  
CN Phenol, 4-ethenyl-, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 169811-45-4

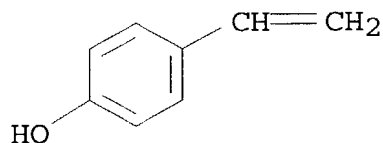
CMF C14 H20 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IT 196709-58-7 196709-61-2 196709-63-4  
196709-65-6

(pos.-working photosensitive compns. for photofabrication contg.)

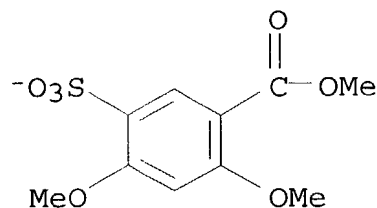
RN 196709-58-7 HCAPLUS

CN Sulfonium, triphenyl-, salt with 1-methyl 2,4-dimethoxy-5-sulfobenzoate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 196709-57-6

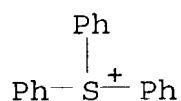
CMF C10 H11 O7 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



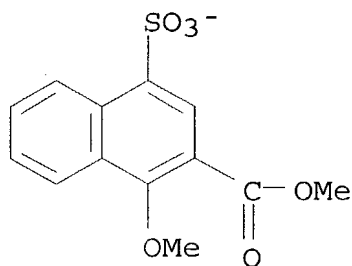
RN 196709-61-2 HCAPLUS

CN Sulfonium, tris[4-(1,1-dimethylethoxy)phenyl]-, salt with 2-methyl 1-methoxy-4-sulfo-2-naphthalenecarboxylate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 196709-59-8

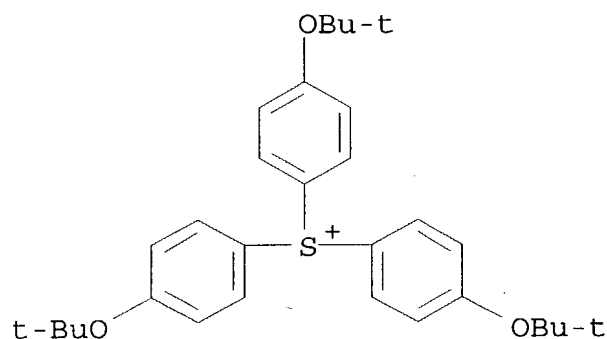
CMF C13 H11 O6 S



CM 2

CRN 137455-55-1

CMF C30 H39 O3 S



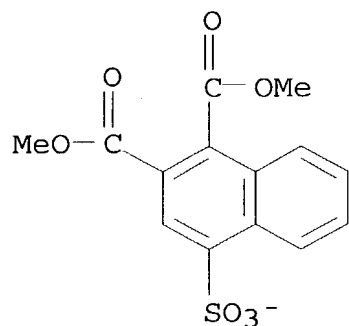
RN 196709-63-4 HCAPLUS

CN Sulfonium, (4-methoxyphenyl)diphenyl-, salt with 1,2-dimethyl 4-sulfo-1,2-naphthalenedicarboxylate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 196709-62-3

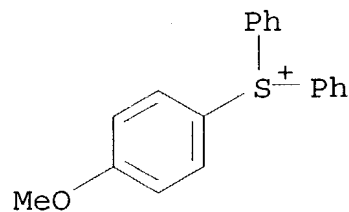
CMF C14 H11 O7 S



CM 2

CRN 70084-23-0

CMF C19 H17 O S



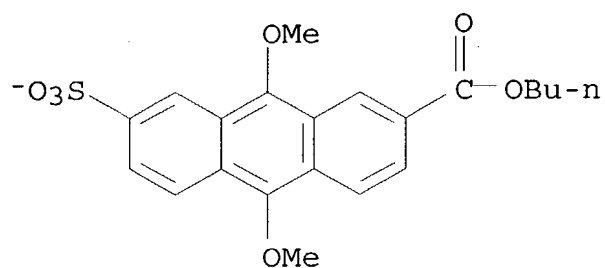
RN 196709-65-6 HCAPLUS

CN Sulfonium, triphenyl-, salt with 2-butyl 9,10-dimethoxy-7-sulfo-2-anthracenecarboxylate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 196709-64-5

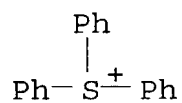
CMF C21 H21 O7 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 196709-55-4P 196709-56-5P 196709-60-1P

(prepn. and use in pos.-working photosensitive compns. for photofabrication)

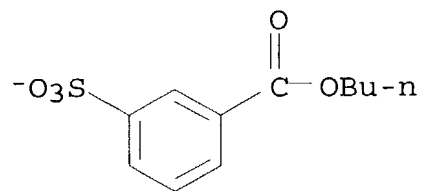
RN 196709-55-4 HCAPLUS

CN Sulfonium, triphenyl-, salt with 1-butyl 3-sulfobenzoate (1:1) (9CI)  
(CA INDEX NAME)

CM 1

CRN 196709-54-3

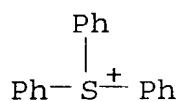
CMF C11 H13 O5 S



CM 2

CRN 18393-55-0

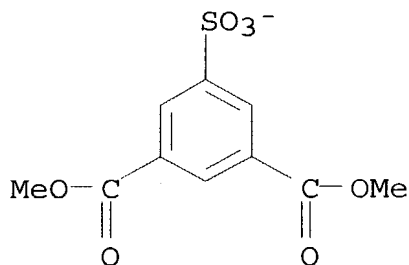
CMF C18 H15 S



RN 196709-56-5 HCAPLUS  
 CN Sulfonium, triphenyl-, salt with 1,3-dimethyl 5-sulfo-1,3-benzenedicarboxylate (1:1) (9CI) (CA INDEX NAME)

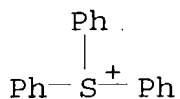
CM 1

CRN 46914-24-3  
 CMF C10 H9 O7 S



CM 2

CRN 18393-55-0  
 CMF C18 H15 S

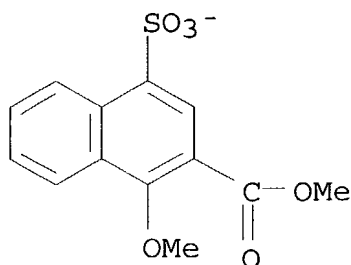


RN 196709-60-1 HCAPLUS  
 CN Sulfonium, triphenyl-, salt with 2-methyl 1-methoxy-4-sulfo-2-naphthalenecarboxylate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 196709-59-8  
 CMF C13 H11 O6 S

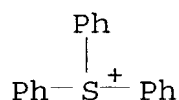




CM 2

CRN 18393-55-0

CMF C18 H15 S



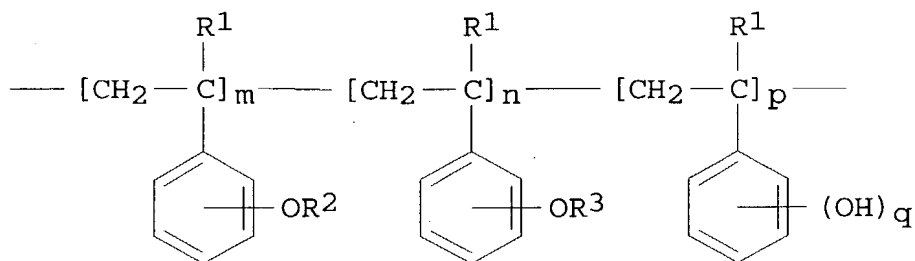
- IC ICM G03F007-004
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT Positive **photoresists**  
(contg. triphenylsulfonium arylsulfonates and diphenyliodonium arylsulfonates)
- IT 125325-82-8, p-Hydroxystyrene-p-(2-tetrahydropyranyloxy)styrene copolymer 142952-62-3, tert-Butoxycarbonylmethoxystyrene-p-hydroxystyrene copolymer 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 196709-91-8, p-(1-tert-Butoxyethoxy)styrene-p-hydroxystyrene copolymer (pos. photosensitive compns. for photofabrication contg. triphenylsulfonium arylsulfonates or diphenyliodonium arylsulfonates and)
- IT 196709-58-7 196709-61-2 196709-63-4  
196709-65-6 196709-66-7 196709-69-0  
(pos.-working photosensitive compns. for photofabrication contg.)
- IT 196709-55-4P 196709-56-5P 196709-60-1P  
196709-67-8P 196709-72-5P 196709-75-8P  
(prepn. and use in pos.-working photosensitive compns. for photofabrication)

L45 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2003 ACS  
1997:574586 Document No. 127:270471 Alkali-developable  
chemical-enhanced positive-working **resist** material showing  
high-sensitivity to high energy ray. Watanabe, Satoshi; Watanabe,  
Osamu; Nagura, Shigehiro; Ishihara, Toshinobu (Shin-Etsu Chemical  
Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09211866 A2

19970815 Heisei, 34 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1996-266776 19960917. PRIORITY: JP 1995-287944  
19951009; JP 1995-287945 19951009; JP 1995-337900 19951201; JP  
1995-337901 19951201.

GI



AB The title **resist** material comprises (1) an org. solvent,  
(2) a polymer I ( $R_1 = H, CH_3$ ;  $R_2, R_3 =$  acid-unstable group;  $0.02$   
.ltoreq.  $m/(m+n+p)$  .ltoreq.  $0.5$ ;  $0.01$  .ltoreq.  $n/(m+n+p)$  .ltoreq.  
 $0.3$ ;  $0 < (m+n)/(m+n+p)$  .ltoreq.  $0.8$ ;  $q = 1-3$ ), with a wt. av. mol.  
wt.  $3,000-300,000$ , (3) an **acid-generator**, and  
further (4) a dissoln. prohibiter.

IT 157089-24-2 161453-44-7 170632-61-8  
180801-55-2 186769-06-2 186769-08-4  
195723-93-4 195723-94-5

(**acid-generator** for alk.-developable  
chem.-enhanced pos.-working **resist** material)

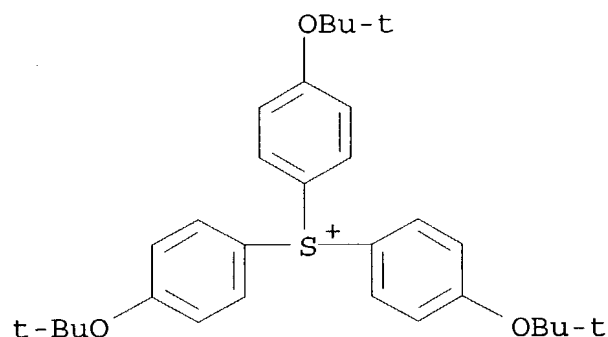
RN 157089-24-2 HCAPLUS

CN Sulfonium, tris[4-(1,1-dimethylethoxy)phenyl]-, salt with  
trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 137455-55-1

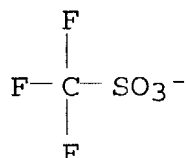
CMF C30 H39 O3 S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



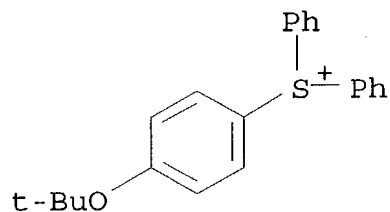
RN 161453-44-7 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 157089-25-3

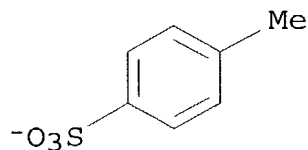
CMF C22 H23 O S



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



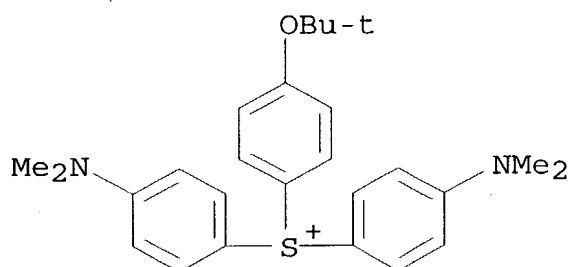
RN 170632-61-8 HCAPLUS

CN Sulfonium, bis[4-(dimethylamino)phenyl][4-(1,1-dimethylethoxy)phenyl]-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 170632-60-7

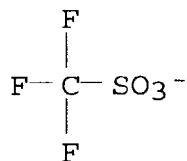
CMF C26 H33 N2 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



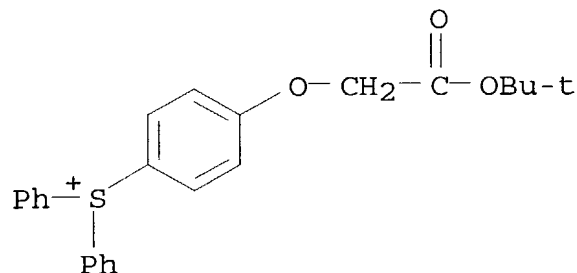
RN 180801-55-2 HCAPLUS

CN Sulfonium, [4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]diphenyl-,  
salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 180801-54-1

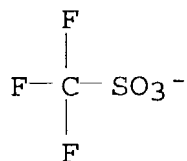
CMF C24 H25 O3 S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



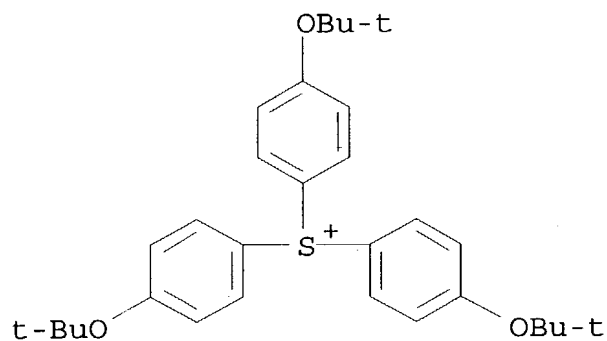
RN 186769-06-2 HCAPLUS

CN Sulfonium, tris[4-(1,1-dimethylethoxy)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 137455-55-1

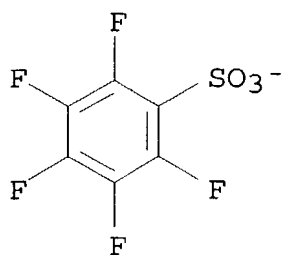
CMF C30 H39 O3 S



CM 2

CRN 46377-88-2

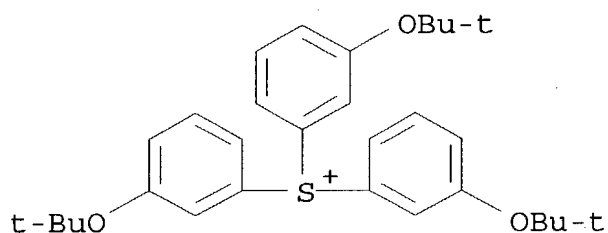
CMF C6 F5 O3 S



RN 186769-08-4 HCAPLUS  
 CN Sulfonium, tris[3-(1,1-dimethylethoxy)phenyl]-, salt with  
 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

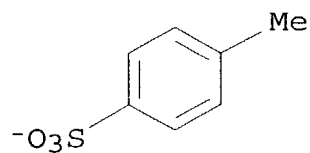
CM 1

CRN 186769-07-3  
 CMF C30 H39 O3 S



CM 2

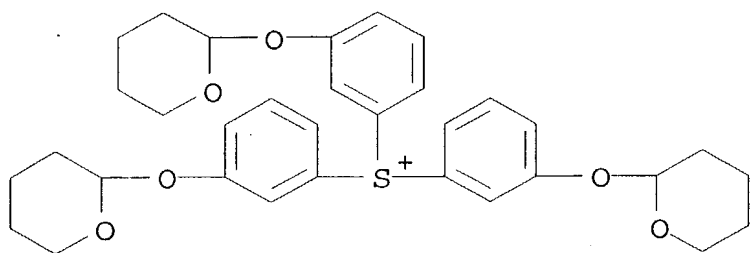
CRN 16722-51-3  
 CMF C7 H7 O3 S



RN 195723-93-4 HCAPLUS  
 CN Sulfonium, tris[3-[(tetrahydro-2H-pyran-2-yl)oxy]phenyl]-, salt with  
 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

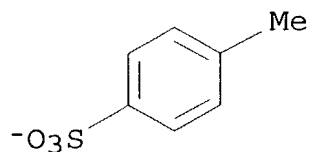
CRN 195723-92-3  
 CMF C33 H39 O6 S



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



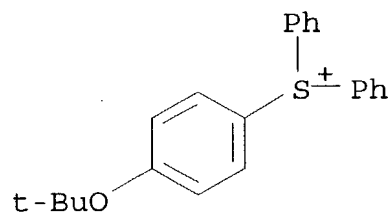
RN 195723-94-5 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with  
(1S,4R)-7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonic  
acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 157089-25-3

CMF C22 H23 O S

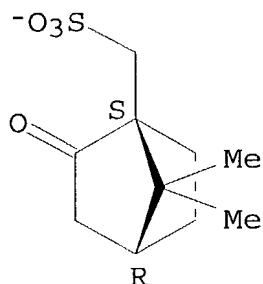


CM 2

CRN 46362-90-7

CMF C10 H15 O4 S

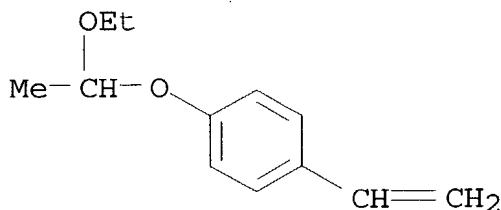
Absolute stereochemistry.



IT 158593-28-3, 4-(1-Ethoxyethoxy)styrene; 4-hydroxystyrene  
copolymer 186769-12-0, 4-(1-Butoxyethoxy)styrene;  
4-hydroxystyrene copolymer  
(dissoln. prohibiter for alk.-developable chem.-enhanced  
pos.-working **resist** material)  
RN 158593-28-3 HCAPLUS  
CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene  
(9CI) (CA INDEX NAME)

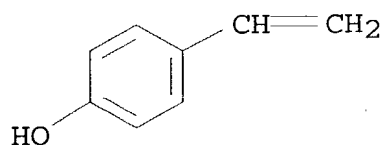
CM 1

CRN 157057-20-0  
CMF C12 H16 O2



CM 2

CRN 2628-17-3  
CMF C8 H8 O



RN 186769-12-0 HCAPLUS

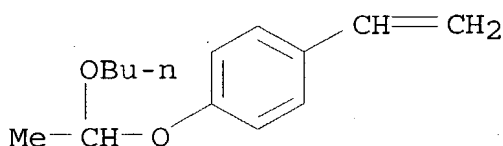


CN Phenol, 4-ethenyl-, polymer with 1-(1-butoxyethoxy)-4-ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 170635-32-2

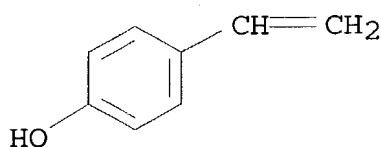
CMF C14 H20 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)

ST alk developable chem enhanced **resist**; pos working  
**resist** material

IT Positive **photoresists**

(alk.-developable, chem.-enhanced; contg. specified polymer)

IT 186769-14-2, 4-(1-Ethoxy-1-methylethoxy)styrene; 4-hydroxystyrene  
copolymer

(1dissoln. prohibiter for alk.-developable chem.-enhanced  
pos.-working **resist** material)

IT 117458-06-7 157089-24-2 161453-44-7

162102-77-4 170632-61-8 180801-55-2

186769-06-2 186769-08-4 195723-93-4

195723-94-5

(**acid-generator** for alk.-developable

chem.-enhanced pos.-working **resist** material)

IT 62-53-3, Benzenamine, uses 95-84-1, 2-Amino-p-cresol 102-71-6,

uses 110-18-9 110-89-4, Piperidine, uses 120-73-0, Purine

127-19-5, N,N-Dimethylacetamide 142-08-5, 2(1H)-Pyridinone

872-50-4, N-Methyl pyrrolidone, uses 4458-32-6, Methyl ethyl

- propyl amine 34521-19-2, Pyridine sulfonic acid  
(alkali-developable chem.-enhanced pos.-working **resist**  
material showing high-sensitivity to high energy ray)
- IT 108-00-9 110-60-1, 1,4-Butanediamine  
(basic compd. for alk.-developable chem.-enhanced pos.-working  
**resist** material)
- IT 574-00-5D, Naphthalene-1,2-diol, t-butoxy carbonyl partially  
substituted 1620-68-4D, t-butoxy carbonyl partially substituted  
7583-20-2D, t-butoxy carbonyl partially substituted 9016-83-5D,  
Cresol-formaldehyde copolymer, t-butoxy carbonyl partially  
substituted 18066-45-0D, t-butoxy carbonyl partially substituted  
24979-70-2, 4-Hydroxystyrene homopolymer 24979-70-2D,  
4-Hydroxystyrene homopolymer, t-butoxy carbonyl partially  
substituted 104105-16-0D, t-butoxy carbonyl partially substituted  
123589-22-0, 4-tert-Butoxystyrene-4-hydroxystyrene copolymer  
125325-82-8, 4-(2-Tetrahydropyranyloxy)styrene; 4-hydroxystyrene  
copolymer 128595-64-2D, t-butoxy carbonyl partially substituted  
129674-22-2, 4-tert-Butoxycarbonyloxystyrene-4-hydroxystyrene  
copolymer 151319-83-4D, ethoxy Et partially substituted  
**158593-28-3**, 4-(1-Ethoxyethoxy)styrene; 4-hydroxystyrene  
copolymer 168766-36-7D, t-butoxy carbonyl partially substituted  
**186769-12-0**, 4-(1-Butoxyethoxy)styrene; 4-hydroxystyrene  
copolymer 186848-70-4D, t-butoxy carbonyl partially substituted  
186848-71-5D, t-butoxy carbonyl partially substituted  
(dissoln. prohibiter for alk.-developable chem.-enhanced  
pos.-working **resist** material)
- IT 109-53-5DP, reaction product with hydrolyzed p-t-butoxy styrene  
homopolymer and then being butylated 109-92-2DP, reaction product  
with hydrolyzed p-t-butoxy styrene homopolymer and then being  
butylated 764-47-6DP, Propyl vinyl ether, reaction product with  
hydrolyzed p-t-butoxy styrene homopolymer and then being butylated  
926-02-3DP, reaction product with hydrolyzed p-t-butoxy styrene  
homopolymer and then being butylated 928-55-2DP, Ethyl propenyl  
ether, reaction product with hydrolyzed p-t-butoxy styrene  
homopolymer and then being butylated 2182-55-0DP, reaction product  
with hydrolyzed p-t-butoxy styrene homopolymer and then being  
butylated 7319-16-6DP, Methyl propenyl ether, reaction product  
with hydrolyzed p-t-butoxy styrene homopolymer and then being  
butylated 24424-99-5DP, Di-tert-butyl dicarbonate, reaction  
product with hydrolyzed and ethylated p-t-butoxy styrene homopolymer  
95418-60-3DP, p-t-Ert-Butoxystyrene homopolymer, hydrolyzed,  
alkylated 177034-75-2P, p-t-Butoxycarbonyloxy styrene;  
p-1-ethoxyethoxy styrene; p-vinyl phenol copolymer 195723-88-7P  
195723-89-8P 195723-90-1DP, reaction product with hydrolyzed  
p-t-butoxy styrene homopolymer and then being butylated  
(prepd. and contained in alk.-developable chem.-enhanced  
pos.-working **resist** material)

L45 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2003 ACS  
1997:543427 Document No. 127:154647 Polymer composition for  
**photoresist** material. Urano, Fumiyoshi; Fujie, Hirotoishi;  
Oono, Keiji (Wako Pure Chemical Industries, Ltd., Japan). Eur. Pat.

Appl. EP 780732 A2 **19970625**, 57 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1996-309142 19961213. PRIORITY: JP 1995-349768 19951221; JP 1996-156233 19960528; JP 1996-160840 19960531.

AB A polymer compn. comprising (i) a polymer (a) having a monomer unit contg. a functional group A which becomes alkali-sol. by heating in the presence of an acid, (ii) a polymer (b) having a monomer unit contg. a functional group B which also becomes alkali-sol., but less easily than the functional group A, by heating in the presence of an acid, and if necessary in addn. to (i) and (ii) or in place of (ii), (iii) a phenolic compd. having a wt.-av. mol. wt. of 300 to 1500 gives together with an **photoacid** generator a **photoresist** material suitable for forming a pattern excellent in sensitivity, resolu., mask linearity, and other properties.

IT **158593-28-3P**, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer **193214-59-4P**, p-Hydroxystyrene-p-(1-methoxyethoxy)styrene copolymer  
(chem.-amplification heat-sensitive **photoresist** compns. contg.)

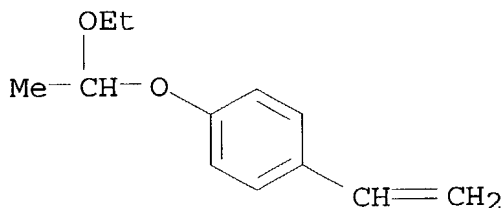
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

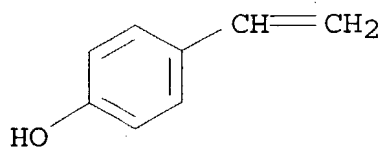
CMF C12 H16 O2



CM 2

CRN 2628-17-3

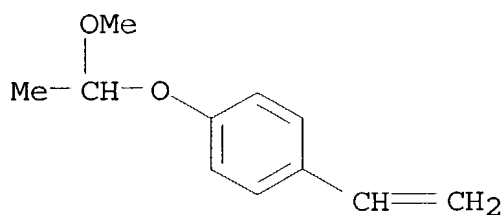
CMF C8 H8 O



RN 193214-59-4 HCAPLUS  
 CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-methoxyethoxy)benzene (9CI) (CA INDEX NAME)

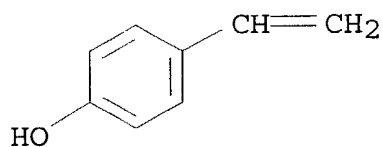
CM 1

CRN 151189-10-5  
 CMF C11 H14 O2



CM 2

CRN 2628-17-3  
 CMF C8 H8 O



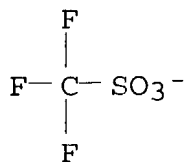
IT 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate  
 81416-37-7  
 (chem.-amplification heat-sensitive **photoresist** compns.  
 contg.)

RN 66003-78-9 HCAPLUS  
 CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1)  
 (9CI) (CA INDEX NAME)

CM 1

CRN 37181-39-8

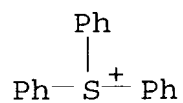
CMF C F3 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



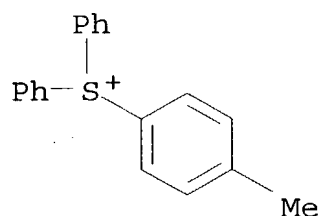
RN 81416-37-7 HCAPLUS

CN Sulfonium, (4-methylphenyl)diphenyl-, salt with  
trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47045-31-8

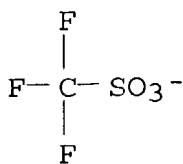
CMF C19 H17 S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



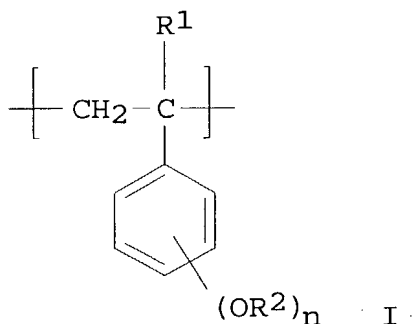
- IC ICM G03F007-039  
ICS G03F007-004
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST chem amplification **photoresist** polymer compn; heat sensitive **photoresist** polymer compn
- IT **Photoresists**  
(chem.-amplification; heat-sensitive polymer compns. for)
- IT 27029-76-1P, m-Cresol-p-cresol-formaldehyde copolymer  
123589-22-0P, p-tert-Butoxystyrene-p-hydroxystyrene copolymer  
129674-22-2P, p-tert-Butoxycarbonyloxystyrene-p-hydroxystyrene copolymer 142952-62-3P **158593-28-3P**,  
p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 171418-03-4P  
171429-60-0P, p-tert-Butoxystyrene- p-(1-ethoxyethoxy)styrene-  
p-hydroxystyrene copolymer 171429-61-1P, p-(1-Ethoxyethoxy)styrene-  
p-hydroxystyrene- p-methylstyrene copolymer 177034-67-2P,  
p-(1-Ethoxyethoxy)styrene- p-hydroxystyrene- styrene copolymer  
177034-68-3P, p-tert-Butoxystyrene-p-hydroxystyrene-p-(1-methoxy-1-  
methylethoxy)styrene copolymer 177034-74-1P, p-(1-  
Ethoxyethoxy)styrene-p-hydroxystyrene-p-  
(tetrahydropyranyloxy)styrene copolymer 177034-75-2P,  
p-(tert-Butoxycarbonyloxy)styrene-p-(1-ethoxyethoxy)styrene-p-  
hydroxystyrene copolymer 177034-76-3P, p-tert-Butylvinylphenoxy  
acetate-p-hydroxystyrene-p-(1-methoxyethoxy)styrene copolymer  
**193214-59-4P**, p-Hydroxystyrene-p-(1-methoxyethoxy)styrene  
copolymer 193214-62-9P, p-Hydroxystyrene-p-  
(tetrahydropyranyl)styrene copolymer 193214-65-2P,  
p-(1-Ethoxyethoxy)styrene-fumaronitrile-p-hydroxystyrene copolymer  
193214-68-5P, p-Hydroxystyrene-p-isobutoxycarbonyloxystyrene  
copolymer 193214-70-9P, p-(Ethoxycarbonyloxy)styrene-p-  
hydroxystyrene copolymer 193214-72-1P, p-(1-Ethoxyethoxy)styrene-p-  
hydroxystyrene-p-(isopropoxycarbonyloxy)styrene copolymer  
193214-74-3P, p-Cresol-1,4-di(hydroxymethyl)benzene copolymer  
(chem.-amplification heat-sensitive **photoresist** compns.  
contg.)
- IT 131-55-5, 2,2',4,4'-Tetrahydroxybenzophenone 577-56-0,  
O-Acetylbenzoic acid 1886-74-4, Bis(phenylsulfonyl)diazomethane  
7509-44-6, 9-Diazo-10-phenanthrene 14159-45-6 28322-50-1  
28343-24-0 39153-56-5 **66003-78-9**, Triphenylsulfonium  
trifluoromethanesulfonate **81416-37-7** 138529-81-4,  
Bis(cyclohexylsulfonyl)diazomethane 138529-83-6 138529-94-9  
150747-03-8 150747-04-9 171429-57-5 193214-76-5 193214-90-3  
193214-93-6 193214-96-9 193428-05-6  
(chem.-amplification heat-sensitive **photoresist** compns.)

contg.)

L45 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2003 ACS

1997:168467 Document No. 126:164258 Polymer compounds and chemically amplified positive-type **photoresists** using the same providing heat-resistant **resist** patterns. Watanabe, Osamu; Takeda, Yoshifumi; Tsucha, Junji; Ishihara, Toshinobu (Shinetsu Chem Ind Co, Japan). Jpn. Kokai Tokkyo Koho JP 08337616 A2 19961224 Heisei, 38 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-90203 19960319. PRIORITY: JP 1995-111189 19950412.

GI



AB The title polymers have the general formula I ( $\text{R}^1 = \text{H}, \text{Me}$ ;  $\text{R}^2 = \text{H}$ , acid-labile group; at least one of  $\text{R}^2$  is H and acid labile group;  $n = 2, 3$ ) of Mw 3000-300,000 and are used with org. solvents and **acid generator** and optionally phenolic dissoln. control agents for **resists**. A **resist** comprised 3,4-Me<sub>3</sub>COCO<sub>2</sub>(HO)C<sub>6</sub>H<sub>3</sub>CMe:CH<sub>2</sub> polymer 80, p-Me<sub>3</sub>COC<sub>6</sub>H<sub>4</sub>S+Ph<sub>2</sub> p-MeC<sub>6</sub>H<sub>4</sub>SO<sub>3</sub>- 3, and DGLM 300 parts.

IT 186768-94-5P

(polymer compds. and chem. amplified pos.-type **photoresists** using the same providing heat-resistant **resist** patterns)

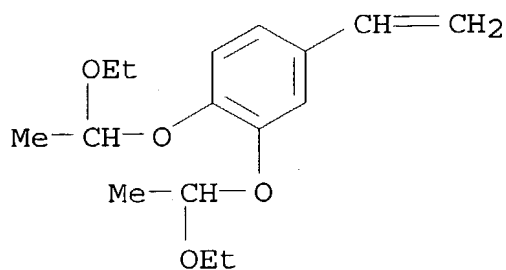
RN 186768-94-5 HCAPLUS

CN 1,2-Benzenediol, 4-ethenyl-, polymer with 4-ethenyl-1,2-bis(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 186768-92-3

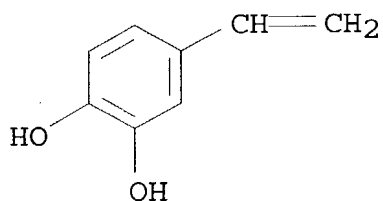
CMF C16 H24 O4



CM 2

CRN 6053-02-7

CMF C8 H8 O2



IT 157089-24-2 158593-28-3 161453-44-7  
 170632-63-0 180801-55-2 186769-06-2  
 186769-08-4 186769-10-8 186769-11-9  
 186769-12-0

(polymer compds. and chem. amplified pos.-type  
**photoresists** using the same providing heat-resistant  
**resist** patterns)

RN 157089-24-2 HCAPLUS

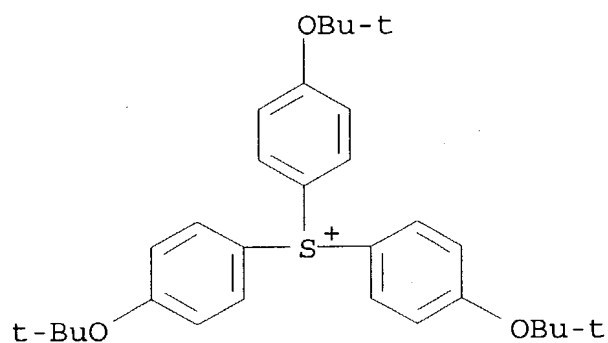
CN Sulfonium, tris[4-(1,1-dimethylethoxy)phenyl]-, salt with  
 trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 137455-55-1

CMF C30 H39 O3 S

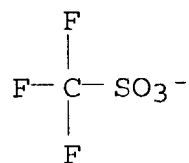




CM 2

CRN 37181-39-8

CMF C F3 O3 S



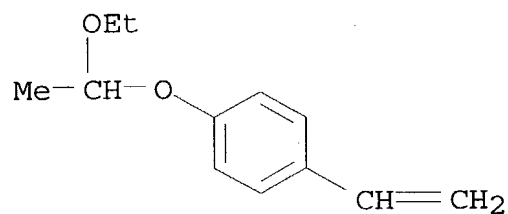
RN 158593-28-3 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

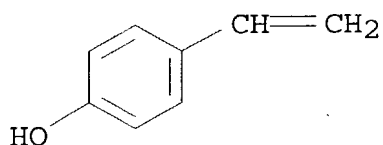
CMF C12 H16 O2



CM 2

CRN 2628-17-3

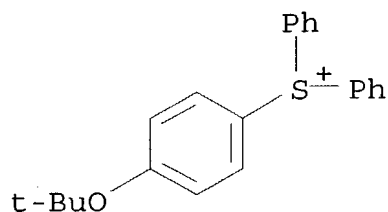
CMF C8 H8 O



RN 161453-44-7 HCAPLUS  
 CN Sulfonium, [4-(1,1-dimethylethoxy)phenyl]diphenyl-, salt with  
 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

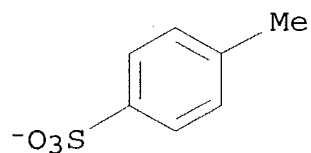
CM 1

CRN 157089-25-3  
 CMF C22 H23 O S



CM 2

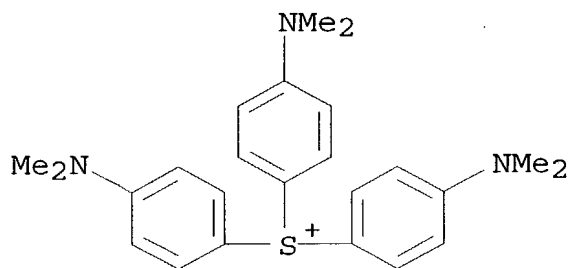
CRN 16722-51-3  
 CMF C7 H7 O3 S



RN 170632-63-0 HCAPLUS  
 CN Sulfonium, tris[4-(dimethylamino)phenyl]-, salt with  
 trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

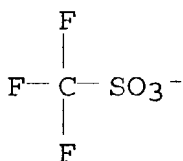
CRN 170632-62-9  
 CMF C24 H30 N3 S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



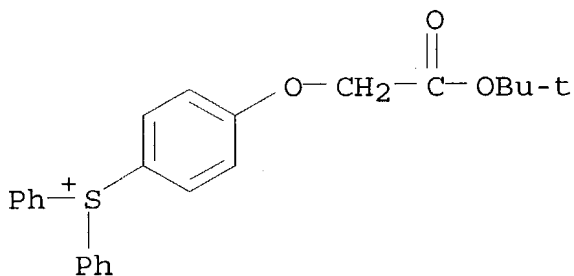
RN 180801-55-2 HCAPLUS

CN Sulfonium, [4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]diphenyl-,  
salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 180801-54-1

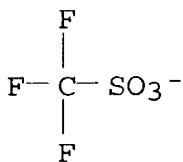
CMF C24 H25 O3 S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



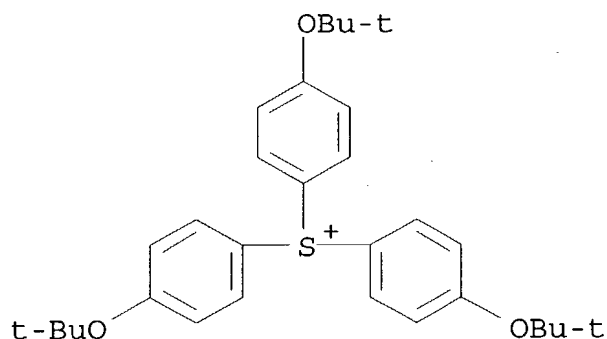
RN 186769-06-2 HCAPLUS

CN Sulfonium, tris[4-(1,1-dimethylethoxy)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 137455-55-1

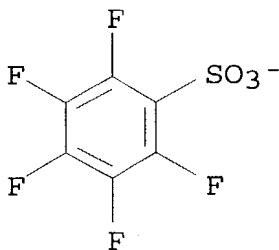
CMF C30 H39 O3 S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



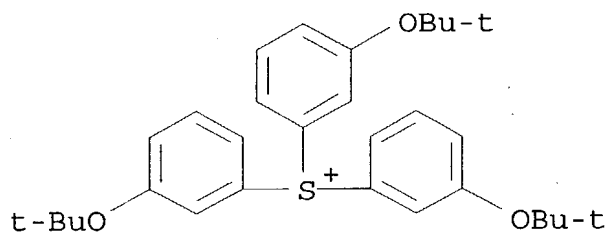
RN 186769-08-4 HCAPLUS

CN Sulfonium, tris[3-(1,1-dimethylethoxy)phenyl]-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 186769-07-3

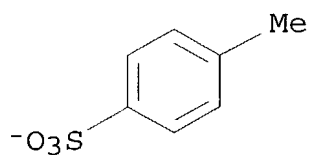
CMF C30 H39 O3 S



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



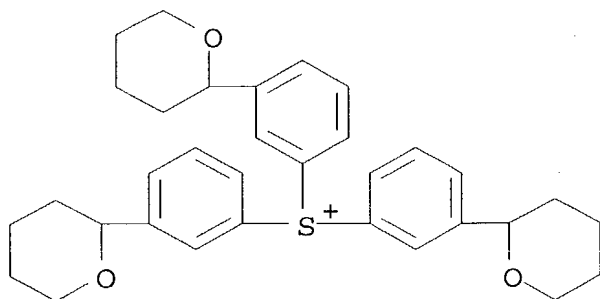
RN 186769-10-8 HCAPLUS

CN Sulfonium, tris[3-(tetrahydro-2H-pyran-2-yl)phenyl]-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 186769-09-5

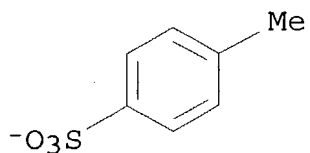
CMF C33 H39 O3 S



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



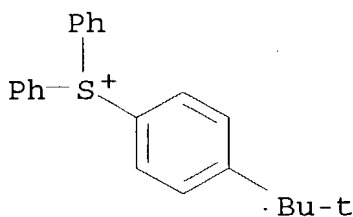
RN 186769-11-9 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with  
7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonic acid (1:1)  
(9CI) (CA INDEX NAME)

CM 1

CRN 66482-54-0

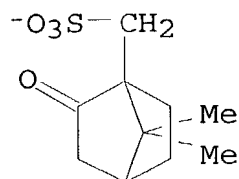
CMF C22 H23 S



CM 2

CRN 55077-28-6

CMF C10 H15 O4 S



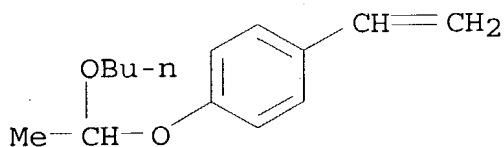
RN 186769-12-0 HCAPLUS

CN Phenol, 4-ethenyl-, polymer with 1-(1-butoxyethoxy)-4-ethenylbenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 170635-32-2

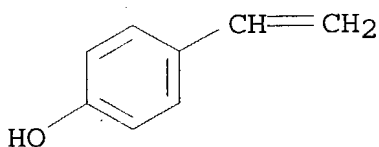
CMF C14 H20 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



- IC ICM C08F012-22  
ICS C08F220-06; G03F007-004; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 35
- ST hydroxystyrene polymer **photoresist**; **acid generator photoresist**; dissoln control agent **photoresist**; amine additive **photoresist**; sulfonium compd **acid generator**
- IT Positive **photoresists**  
(polymer compds. and chem. amplified pos.-type **photoresists** using the same providing heat-resistant **resist** patterns)
- IT Amines, uses  
Bases, uses  
Sulfonium compounds  
(polymer compds. and chem. amplified pos.-type **photoresists** using the same providing heat-resistant **resist** patterns)
- IT Acids, uses  
(precursors; polymer compds. and chem. amplified pos.-type **photoresists** using the same providing heat-resistant **resist** patterns)
- IT 186768-70-7P 186768-72-9P 186768-74-1P 186768-76-3P  
186768-78-5P 186768-80-9P 186768-82-1P 186768-85-4P

186768-86-5P 186768-87-6P 186768-88-7P 186768-89-8P  
186768-90-1P 186768-91-2P 186768-93-4P **186768-94-5P**  
186768-97-8P 186768-99-0P 186769-00-6P 186769-01-7P  
186769-03-9P 186769-05-1P

(polymer compds. and chem. amplified pos.-type  
**photoresists** using the same providing heat-resistant  
**resist** patterns)

IT 56-41-7, Alanine, uses 62-53-3, Aniline, uses 95-84-1,  
2-Amino-p-cresol 102-71-6, uses 110-60-1, Tetramethylenediamine  
110-70-3, N,N'-Dimethylethylenediamine 110-89-4, Piperidine, uses  
120-73-0, Purine 127-19-5 142-08-5, 2-Hydroxypyridine  
4458-32-6, Methylethylpropylamine 14159-45-6 34521-19-2,  
Pyridinesulfonic acid 104105-16-0 117458-06-7 123589-22-0  
125325-82-8 129674-22-2 141573-11-7 145685-50-3 147625-42-1  
151319-83-4D, 2-ethoxyethyl ethers **157089-24-2**  
**158593-28-3 161453-44-7 162102-77-4**  
168766-36-7D, tert-Bu ethers **170632-63-0**  
**180801-55-2 186769-06-2 186769-08-4**  
**186769-10-8 186769-11-9 186769-12-0**  
186769-14-2 186811-04-1 186811-05-2D, tert-Bu carbonates  
186811-06-3 186811-07-4 186811-08-5 186912-09-4 186912-10-7  
(polymer compds. and chem. amplified pos.-type  
**photoresists** using the same providing heat-resistant  
**resist** patterns)